

THE CINCINNATI TOOL CO.

manufacturers of

HARGRAVE  Tested Tools



GENERAL CATALOG NO. 80

THE CINCINNATI TOOL CO. • Cincinnati 12, Ohio



FOREWORD

Facts about The Cincinnati Tool Co.



Manufacturer of **HARGRAVE** Tested Tools

Since 1879 The Cincinnati Tool Co. has manufactured Industrial Quality Hand Tools.

The Trade-Mark **HARGRAVE** on our Clamps, Chisels, Punches, Masonry Drills, Gasket Cutters and other tools, stands for the Highest Standards of Design, Material and Workmanship.

Our Sales Policy is to sell to the Wholesale Hardware and Industrial Supply Houses in stock quantities. This policy results in the lowest possible cost to consumers for our products, as well as enabling us to give the best possible service. We make no secret rebates or preferential prices.

Sales Aids are parts of our service. Attractive advertising literature, featuring our entire line, or any part, is available on request to all distributors; this includes envelope stuffers, catalog size pages, as well as pocket-size condensed catalog. Tying in with this is our extensive nation-wide direct mail and trade paper advertising directed to the users of our type tools.

We carry a complete stock of electrotypes to aid distributors in compiling their catalogs; also, complete copy and cuts are available, in conformity with Catalog Standards adopted by the National and Southern Distributors' Associations, for those who desire to use the Photo-Offset Method of reproduction.

Our salesmen are ready to assist in the field at any time where specialized experience will help.

Cooperative Practice We try to increase our business through our wholesale customers. We ask in return that they justify our confidence by carrying a reasonable stock; drop shipments must be made at times, but don't overdo it. Goods are packaged to suit average minimum stock requirements. An extra charge is made for broken packages. Every effort is made to fill and ship an order as quickly as possible.

Testing and Inspection of Tools is rigidly adhered to; this assures satisfactory performance. If any of our tools fail in service, we are anxious to learn the cause,—and make replacement if the failure is due to faulty manufacture. We ask, however, that tools not be returned to us without permission.

Shipping Facilities are excellent. Located in Norwood (a suburb of Cincinnati) we have a switch track on the PRR. We are also near the B&O, N&W, NYC, C&O, SOU, L&N and ERIE Railroads, as well as having numerous trucking lines at our convenience.



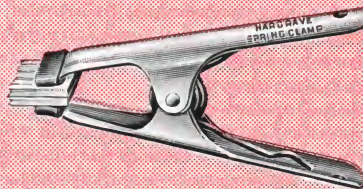
PRINTED IN U. S. A.



SPRING CLAMPS



As regularly furnished.



Clamps furnished with RUBBER TIPS if desired.

USEFUL . . . DURABLE . . . QUICK ACTING . . . LOW COST

HARGRAVE SPRING CLAMPS are made of heavy gauge steel, shaped to give a good hand grip. Spring is high-grade tempered steel, which does not weaken from use, enameled finish. Rivet is large in diameter. All parts are accurately fitted, insuring long and satisfactory service.

Spring Clamps are popular for many operations; they can be applied and removed quicker than any other pattern.

A few of the many applications for which Spring Clamps can be used . . .

- AIRCRAFT BUILDERS
- CLOTH CUTTERS
- PAINTERS (drop cloths)
- SHEET METAL WORKERS
- AUTO BODY WORKERS
- HOMECRAFTERS
- PATTERN MAKERS
- TRUNK MAKERS
- BOOKBINDERS
- LEATHER WORKERS
- PHOTOGRAPHERS
- UPHOLSTERERS
- CABINET MAKERS
- MODEL MAKERS
- PLASTIC MANUFACTURERS
- WELDERS

Special Springs "A", "B" and "C"
Available at Slightly Higher Prices.

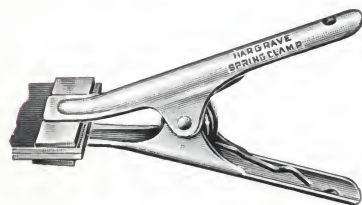
Available in three popular sizes

CLAMPING PRESSURE IN LBS.

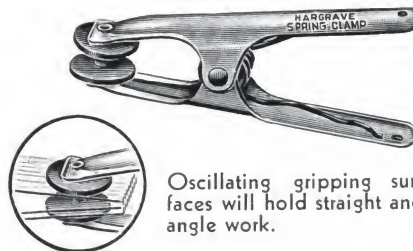
Stock Number	Maximum Opening	Length Inches	Quantity Per Box	Weight, lbs., Per Box	Opening, Inches	Reg. Spring	"A" Spring	"B" Spring	"C" Spring
No. 1	1"	4	12	1½	1	27	20	9	5½
					Half Open	18	15	5	4
No. 2	2"	6	12	4¾	2	40	25	20	12
					Half Open	22	15	13	7
No. 3	3"	9	6	4½	3	80	.....	.....	.....

Special Clamping Surfaces

These two illustrations show special gripping surfaces that are available on all three sizes of Hargrave Spring Clamps. Request price on quantity required.



Furnished with PLATES attached to jaws giving wide clamping surface.



Oscillating gripping surfaces will hold straight and angle work.



No. 5 SPRING CLAMP ASSORTMENT

This Attractive Display "Sells" For You

No. 5 Assortment Consists of:

1—Complete Display Stand and all fixtures as shown.

24—No. 1 Spring Clamps

12—No. 2 Spring Clamps

All packed in one carton for shipping—Approx. Wt. $8\frac{5}{8}$ lbs.

Display Stand made of $\frac{1}{8}$ in. Duron, 16 x $13\frac{3}{4}$ inches, with double wing easel for use on counter or shelf; also, pre-drilled holes allow hanging on perforated board—or elsewhere.

Display Stand Free with Assortment



CIN-CRAFT SMALL "C" CLAMPS

Twice The Strength of Plain Malleable Clamps in Comparable Sizes.

No. 300 CIN-CRAFT type clamp, pressed steel frame with bright enamel finish. Screw, sliding pin handle and pressure tip bright plated. Ideal for Home, Farm, and Small Shop use.

Opening	Depth Inches	Quantity Per Box	Wt., lbs., per Box
1"	$1\frac{1}{8}$	12	$1\frac{3}{4}$
2"	1	12	$3\frac{3}{4}$
$2\frac{1}{2}$ "	$2\frac{1}{2}$	6	5
3"	$1\frac{1}{2}$	6	$4\frac{1}{4}$

No. 60 CIN-CRAFT Assortment Consists of:

1—Display stand and 54 clamps as follows—

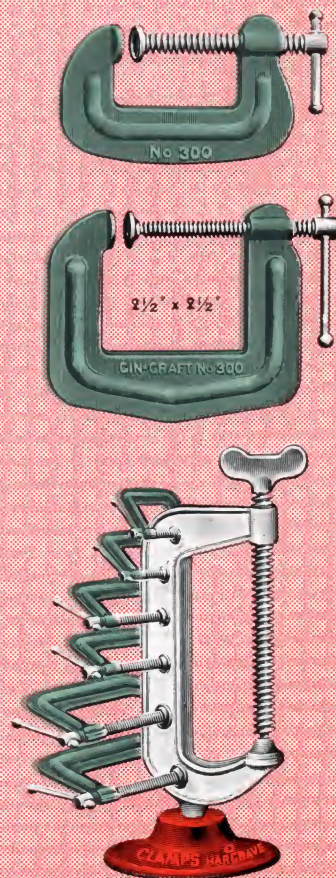
12—1 in. No. 300 Cin-Craft clamps

24—2 in. No. 300 Cin-Craft clamps

6— $2\frac{1}{2}$ in. No. 300 Cin-Craft clamps

12—3 in. No. 300 Cin-Craft clamps

Packed in one carton, 13 x 7 x 8 inches, for shipping.
Approximate weight: 28 lbs.

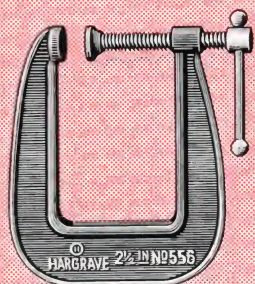
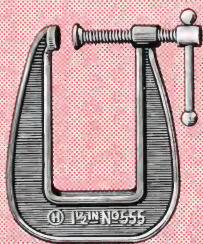




JUNIOR CLAMPS

Strong Malleable Frames and Steel Screws

Used extensively in AIRCRAFT and many other industrial plants. Flat Wing Handle. Natural Finish, rust resistant. Available with Nylon Plastic Cap for Tip and/or Foot to prevent marring. (Quotation on request. Prompt Shipment)



Number	566	568
Opening, inches	1 $\frac{1}{4}$	2 $\frac{1}{2}$
Depth, inches	1 $\frac{1}{4}$	2 $\frac{1}{2}$
Quantity per Box	72	24
Weight, lbs., per Box	14 $\frac{3}{4}$	17

Strong Malleable Alloy Frames

Designed especially for model and pattern making and other light clamping operations. Strong Malleable Alloy frames, specially heat treated, are exceedingly strong for their weight. Rust resistant finish.

Number	551	552
Opening, inches	4	6
Depth, inches	2 $\frac{7}{8}$	3 $\frac{1}{4}$
Quantity per Box	6	6
Weight, lbs., per Box	8 $\frac{1}{8}$	14 $\frac{1}{4}$

Deep Reach

Number	555	556
Opening, inches	1 $\frac{1}{2}$	2 $\frac{1}{2}$
Depth, inches	3 $\frac{1}{2}$	4 $\frac{1}{2}$
Quantity per Box	6	6
Weight, lbs., per Box	3 $\frac{1}{4}$	7

Depth is from center of screw to frame.



SUPER-JUNIOR CLAMPS

Forged Steel—Heat Treated

This Forged Steel line is the answer to the need for MORE STRENGTH, LONGER LIFE and GREATER VALUE in smaller "C" clamps. They have become the favorite clamps of industrial users everywhere.

Forged steel, heat-treated frames make SUPER-JUNIOR Clamps much stronger than pressed steel clamps, malleable, aluminum and other cast clamps on the market. They are much more economical to use on practically all classes of work. Steel Screws are nickel plated.

Seven Convenient Sizes

Especially suitable for jig and pattern work, gluing, welding and aircraft construction. Specify SUPER-JUNIOR Clamps and eliminate the loss of valuable shop time due to small clamp failure. Super-Juniors are made to "take it."

More Strength—Longer Life—Fewer Repairs

All Sizes Available with Nylon Plastic Cap for Tip and/or Foot to prevent marring. Price and delivery time on request.

No.	Opening, Inches	Depth, Inches	Quantity per Box	Wt., lbs., per Box
50	1	1	12	1½
51	1	1½	12	2⅛
52	1¼	1¼	12	2⅜
53	1½	1½	12	3⅜
54	2	1¼	6	2⅛
55	3	1⅜	6	3⅜
56	2½	2½	6	4¼

Please order in PACKAGE quantities

FLAT WING HANDLE FURNISHED WHEN REQUIRED

Depth is from center of screw to frame

... Strength with economy





HARGRAVE CLAMPS

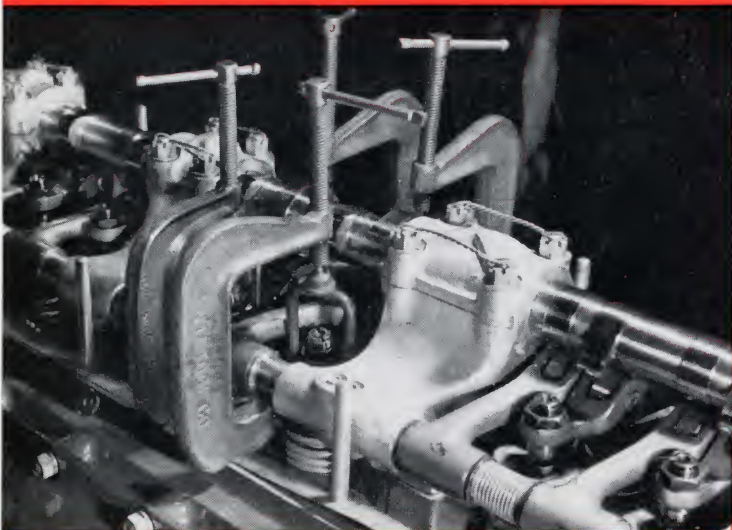
*in use in
Leading Industries*



Welding with aid of No. 540-W Standard Clamps



Hand Screws in Woodworking Shop



No. 400 in use in Auto Manufacture



Welding with aid of Spring Clamps



No. 540-W Clamps aid in Fabricating Metal



Metal Fabricating with Junior Clamps

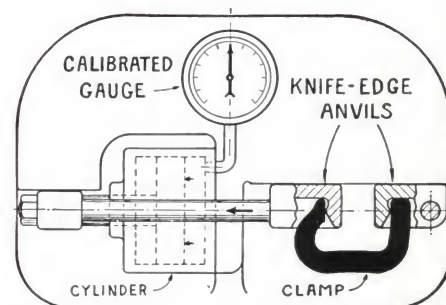
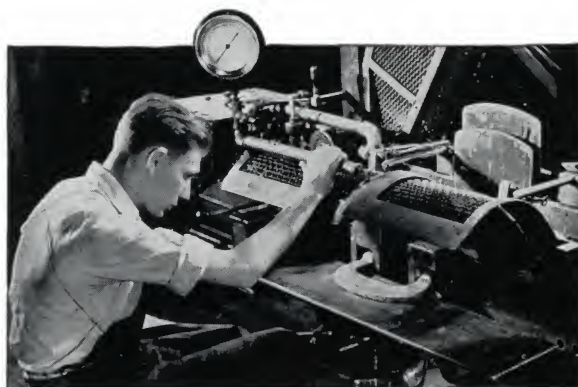
A WORD ABOUT HARGRAVE POWER TESTED CLAMPS



Hargrave "C" Clamps with the exception of the smaller Junior, Super-Junior and Cin-Craft patterns are individually tested on automatic power testing machines. This avoids the possibility of defective clamps reaching the user.

AUTOMATIC POWER TESTING MACHINE

Illustrated below is one of our testing machines which applies loads to 30,000 lbs. (15 tons). This hydraulic unit is used for production testing, as well as for experimental work and comparative tests.



As hydraulic pressure is applied, the knife-edge anvil on left exerts pressure on foot of clamp, simulating the action of the clamp's screw in actual operation.

The following list of test loads applied to eight patterns of Hargrave "C" Clamps in the 6" size clearly shows the necessity of carefully selecting the right clamp best suited to do the job at hand. Strength of other sizes in approximately the same proportion.

No. 552—6	in. Junior Clamp	1,400 lbs.
No. 540—6	in. Standard Carriage Clamp	2,450 lbs.
No. 44—6	in. Forged Steel Superclamp	4,500 lbs.
No. 41—6	in. Welders Clamps	4,500 lbs.
No. 400—6	in. Forged Steel Clamp	5,400 lbs.
No. 42—6	in. Forged Steel Superclamp	11,250 lbs.
No. 43—6	in. Welders Clamps	11,250 lbs.
No. 40—6½	in. Forged Steel Superclamp	27,500 lbs.

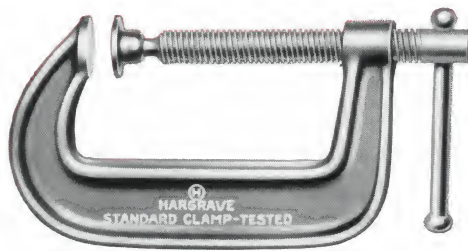
Important—The Test load for each clamp is merely the number of pounds load required to locate any defect. Actually each clamp will stand more than its rated load.

**Suggestions for the Care and Use of Hargrave Clamps
are shown on page 26.**

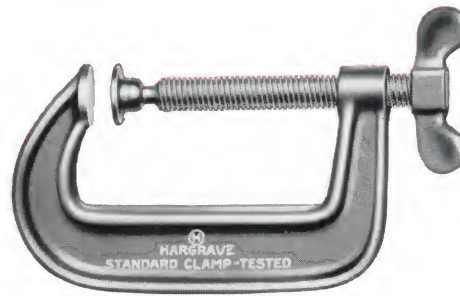


No. 540 STANDARD CARRIAGE CLAMP

Each Clamp Power Tested



No. 540-P Sliding Pin Handle



No. 540-W Wing Handle Forged Integral

IMPORTANT—Furnished with Sliding Pin Handle unless No. 540-W, with steel wing handle, is specified.

The Standard Clamp is preferred by the larger users of such tools because of its superior design and construction.

FRAME—Shaped to give greatest strength for the weight. Each frame is individually tested to more than its rated load on our hydraulic power testing machine.

SCREW—Improved single Acme thread gives more power in tightening. It is specially treated to prevent bending, breaking or marring of the threads.

TIP—Put on to stay. Steel, oscillating type which gives much longer service than the malleable iron tips ordinarily used.

NOTE: The frame of the most popular sizes (2½" to 8", incl.), is made by a special process which gives it great strength. The other sizes have high-grade malleable frame as they cannot be manufactured by the same process.

GENERAL SPECIFICATIONS

Opening, Inches	Depth, Inches	Screw Diameter	Test Load, lbs.	Quantity per Box	Wt., lbs.	Quantity per Carton
2½	1¾	½"	1,100	6	5½ Per Box	36 (6 boxes)
3	1⅞	½"	1,800	6	6¼ " "	36 (6 boxes)
4	2⅛	⅝"	2,150	6	11 " "	36 (6 boxes)
5	2½	⅝"	2,250	6	14 " "	24 (4 boxes)
6	2¾	⅝"	2,450	6	17 " "	24 (4 boxes)
8	3¼	¾"	2,750	Bulk	4 Each	12
10	3⅝	⅞"	2,250	Bulk	7¼ " "	6
12	3⅝"	⅞"	2,850	Bulk	8½ " "	6
14	3¾	⅞"	2,850	Bulk	9¼ " "	6

See listing of quantities above. PLEASE ORDER IN BOX OR CARTON LOTS.

Depth is from center of screw to frame.



No. 530 CLAMP ASSORTMENT

Increase your sales! Increase your profits! With the Most Popular Sizes of No. 540 Standard Clamps On Display



Attractive Display Stand FREE with Assortment Listed

Substantially constructed, compactly designed to occupy minimum space. (12" x 5" x 6" without clamps).

Only seconds required to mount clamps on the shelf of this Display Stand. Space for pricing provided on back.

Attractive Displays, made up of popular sizes, increase your sales. Increased sales reflect increased profits.

No. 530 Assortment

Includes:

- 6—3" No. 540-P Clamps
- 6—4" No. 540-P Clamps
- 6—6" No. 540-P Clamps
- 18—Total. Shipping Wt.: 40 lbs.

All Clamps listed in this Assortment are at regular price—No Charge for Display Stand. (Furnished with Pin Handles unless Wing Handles specified)



FORGED STEEL SUPERCLAMPS

PATENTED

EACH CLAMP IS POWER TESTED

Frames are made by our patented process from an extremely stiff steel, and are heat-treated. The screws are steel, large in diameter, specially treated to prevent bending and battering of threads. Furnished with steel oscillating (ball and socket) tip.

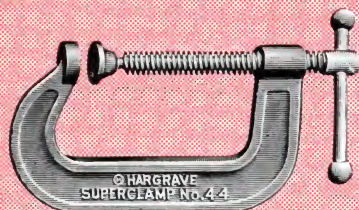
REGULAR DUTY

No. 44 P—(Pin Handle)

No. 44 W—(Wing Handle)

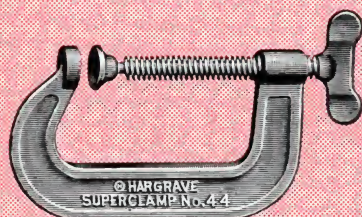
FURNISHED WITH SLIDING PIN HANDLE unless steel wing handle is specified.

Either sliding pin (vise type) handle, or large, heavy steel wing handle forged integral with screw, can be furnished.



No. 44 P

Full length screws on all sizes. Acme thread, oscillating (ball and socket) tip is steel—put on to stay



No. 44 W

Opening, Inches	Depth, Inches	Screw Diameter	Test Load Pounds	Quantity per Box	Wt., lbs.,
*1	1	$\frac{3}{8}$ "	1,800	6	1 $\frac{1}{2}$ per Box
*1 $\frac{1}{2}$	1 $\frac{3}{8}$	$\frac{3}{8}$ "	2,000	6	3 " "
2	1 $\frac{3}{4}$	$\frac{1}{2}$ "	2,700	6	6 " "
3	2 $\frac{1}{4}$	$\frac{1}{2}$ "	3,000	6	9 " "
4	2 $\frac{1}{2}$	$\frac{5}{8}$ "	3,700	6	13 $\frac{1}{2}$ " "
6	3 $\frac{1}{8}$	$\frac{5}{8}$ "	4,500	6	21 " "
8	3 $\frac{3}{4}$	$\frac{3}{4}$ "	5,200	Bulk	5 $\frac{3}{4}$ Each
10	4	$\frac{7}{8}$ "	6,000	Bulk	7 $\frac{7}{8}$ "
12	4	$\frac{7}{8}$ "	8,000	Bulk	9 $\frac{1}{2}$ "

*Available with Nylon Plastic Tip and/or Foot to prevent marring. Quotation on request.

DEEP GENERAL PURPOSE CLAMP

No. 400—BODY CLAMP

No. 400 S—Plated (Spatter Resisting)

(For Welders' Clamps, see Page 17)

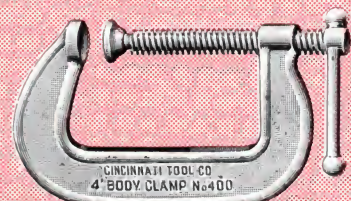
Steel frame is drop forged and heat-treated. It is deep and very strong. Metal is distributed for maximum strength without excessive weight.

Screw is steel, full length to and including 6", specially treated to prevent bending and battering of threads.

Furnished with steel oscillating (ball and socket) tip and sliding pin (vise type) handle.



No. 400



No. 400 S

Maximum Opening	Minimum Opening	Depth, Inches	Screw Diameter	Test Load, Pounds	Wt., lbs., Each
2"	0	2	$\frac{1}{2}$ "	3,300	1
3"	0	2 $\frac{3}{8}$	$\frac{1}{2}$ "	3,500	1 $\frac{1}{2}$
4"	0	2 $\frac{3}{4}$	$\frac{5}{8}$ "	4,100	2 $\frac{1}{8}$
6"	0	3 $\frac{3}{8}$	$\frac{5}{8}$ "	5,400	4 $\frac{1}{8}$
8"	2"	4 $\frac{1}{2}$	$\frac{3}{4}$ "	5,900	6
10"	3"	5 $\frac{3}{8}$	$\frac{3}{4}$ "	6,200	8 $\frac{3}{4}$
12"	4"	5 $\frac{3}{4}$	$\frac{7}{8}$ "	9,300	11

Packed in Bulk

Depth is from center of screw to frame.

HARGRAVE CLAMPS

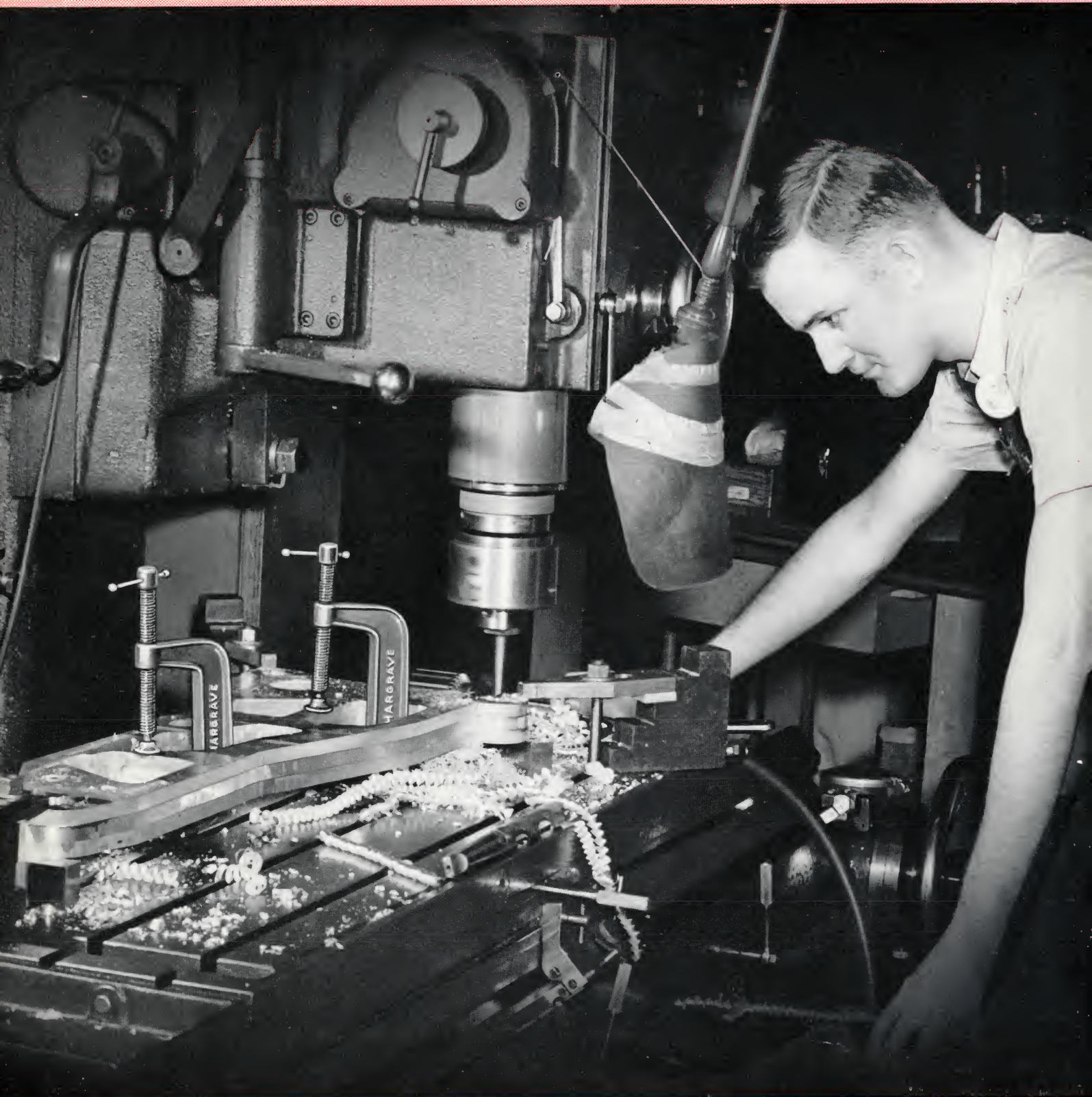
Have a Use in
Every Work Shop





HARGRAVE CLAMPS

Are the Choice of
the World's Largest Users





FORGED STEEL SUPERCLAMP

PATENTED

EACH CLAMP IS POWER TESTED

Frames are made by our patented process from an extremely stiff steel, and are heat-treated. The screws are hardened steel to prevent bending and battering of threads; large in diameter.

Each Superclamp is tested on our Power Driven Hydraulic Testing Machine before it goes into stock. Test load for each clamp given below is merely the number of pounds load to which it has been tested. Each clamp will actually stand more than the figure given.

No. 42—MEDIUM DUTY

Maximum Opening	Minimum Opening	Depth, Inches	Screw Diameter	Test Load, Pounds	Wt., lbs., Each
4"	0"	2½	¾"	10,000	4½
6"	2⅝"	2¾	¾"	11,250	5⅝
8"	4⅛"	2¾	¾"	12,500	6⅛
10"	6⅛"	3	¾"	13,750	8
12"	8⅛"	3	7⁄8"	15,000	8⅞
15"	10"	3¼	7⁄8"	16,250	12⅛
18"	13"	3¼	7⁄8"	17,500	13⅞

Packed in bulk

No. 40—HEAVY DUTY

No. 40 S—Plated (Spatter Resisting)

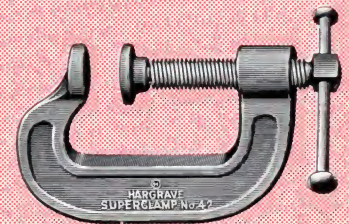
(For Welders' Clamps, see page 17)

Maximum Opening	Minimum Opening	Depth, Inches	Screw Diameter	Test Load, Pounds	Wt., lbs., Each
¾"	0	1⅛	3⁄8"	2,500	¼
1¼"	0	1⅛	3⁄8"	5,600	¾
1¾"	¾"	1⅞	½"	8,750	1½
2¼"	7⁄8"	1⅞	5⁄8"	12,500	3⅝
3¼"	1⅝"	2½	7⁄8"	16,250	6⅝
4½"	2"	2¾	7⁄8"	20,000	10½
5½"	2½"	3¼	7⁄8"	23,800	12⅞
6½"	3⅝"	3¼	1"	27,500	16⅞
8½"	4¼"	3⅝	1⅛"	31,250	25¾
10½"	6⅝"	4	1⅛"	35,000	31¾
12½"	7⅝"	4½	1¼"	40,000	41½

Regular length screws are furnished when full length screws are not specified.

Packed in bulk

Depth is from center of screw to frame.



No. 42

Sliding Pin (vise type) Handle; N. S. C. thread, oscillating (ball and socket) tip is steel—put on to stay.



No. 40

Drop Forged

Full length screws furnished when required.



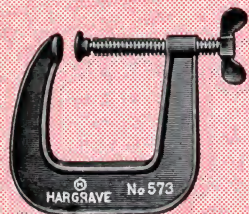
No. 40 S
Drop Forged



DEEP CLAMPS

EACH CLAMP IS POWER TESTED

No. 573—DEEP CLAMP

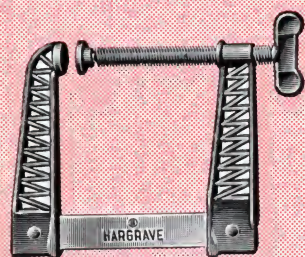


A **medium weight clamp** similar to the Standard Carriage Clamp, but with a deeper reach. Strong, Malleable Alloy frames, specially heat-treated, are exceedingly strong for the weight. Screw is steel with forged wing handle and oscillating (ball and socket) steel tip—put on to stay.

Opening, Inches	Depth, Inches	Screw Diameter	Test Load, Pounds	Wt., lbs., Each
3½	4½	5/8"	1,400	2¼
4½	4½	5/8"	1,400	2¾
6½	4½	5/8"	1,500	3¾

PACKED IN BULK

No. 574—RIGID DEEP CLAMP

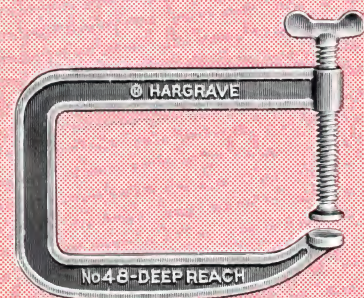


Especially designed for **heavy duty work** where an extremely stiff clamp is required. Strong malleable uprights are securely riveted to high carbon steel bar measuring ½" x 2". Full length steel screws are 7/8" dia., specially treated to prevent bending and battering of threads. Oscillating (ball and socket) steel tip—put on to stay.

Size, Inches	Opening, Inches	Depth, Inches	Screw Diameter	Test Load, Pounds	Wt., lbs., Each
6 x 9	6	9	7/8"	1,500	12½
8 x 9	8	9	7/8"	1,500	12¾
12 x 9	12	9	7/8"	1,500	14½
16 x 9	16	9	7/8"	1,500	16¾

PACKED IN BULK

No. 48—DEEP REACH SUPERCLAMP



Forged Steel Frame of No. 48 makes it an excellent clamp for **deep reach, medium to heavy duty**, clamping operations. Oscillating (ball and socket) steel tip—put on to stay.

Size, Inches	Opening, Inches	Depth, Inches	Size Steel, Inches	Screw Diameter	Test Load, Pounds	Wt., lbs., Each
6 x 8	6	8	½ x 2	5/8"	2,200	8
8 x 12	8	12	½ x 2	¾"	1,800	11½
8 x 16	8	16	5/8 x 2	¾"	1,600	18½
12 x 16	12	16	5/8 x 2	7/8"	1,500	20

PACKED IN BULK

Depth is from center of screw to frame.

HARGRAVE

*Offers The Most Complete Line
A Clamp for Every Job—A Size for Every Purpose*





There is
A HARGRAVE CLAMP
For Every Welding Job





Welders' Clamps (Forged Steel)

EACH CLAMP IS POWER TESTED

The Frames of No. 400S and 40S (both cadmium plated) are Drop Forged from extremely stiff steel, and are heat-treated. The Screws are large in diameter and specially treated to prevent bending and battering of threads. No. 400S is furnished with full length screw to and including 6"; No. 40S is furnished with regular length screw unless full length screw is specified. (Solid bronze alloy screws available on special request).

Each Clamp is tested on our Hydraulic Testing Machine before going into stock. Test loads are given to assist in proper clamp selection for the job.

No. 400S Deep Clamp

Maximum Opening	Minimum Opening	Depth, Inches	Screw Diameter	Test Load, Pounds	Wt., lbs. Each
2"	0	2	1/2"	3,300	1
3"	0	2 3/8	1/2"	3,500	1 1/2
4"	0	2 3/4	5/8"	4,100	2 1/8
6"	0	3 3/4	5/8"	5,400	4 1/8
8"	2"	4 1/2	3/4"	5,900	6
10"	3"	5 3/8	3/4"	6,200	8 3/4
12"	4"	5 3/4	7/8"	9,300	11

Packed in Bulk

No. 40S Heavy Duty

Maximum Opening	Minimum Opening	Depth, Inches	Screw Diameter	Test Load, Pounds	Wt., lbs. Each
3/4"	0	1 1/8	3/8"	2,500	1/4
1 1/4"	0	1 1/8	3/8"	5,600	3/4
1 3/4"	3/4"	1 7/8	1/2"	8,750	1 1/2
2 1/4"	7/8"	1 7/8	5/8"	12,500	3 3/8
3 1/4"	1 3/8"	2 1/2	7/8"	16,250	6 3/8
4 1/2"	2"	2 3/4	7/8"	20,000	10 1/2
5 1/2"	2 1/2"	3 1/4	7/8"	23,800	12 7/8
6 1/2"	3 1/8"	3 1/4	1"	27,500	16 7/8
8 1/2"	4 1/4"	3 3/8	1 1/8"	31,250	25 3/4
10 1/2"	6 3/8"	4	1 1/8"	35,000	31 3/4
12 1/2"	7 5/8"	4 1/2	1 1/4"	40,000	41 1/2

Packed in Bulk

SOLID ALLOY SPATTER RESISTING SCREWS— With Frames Drilled for Ground Connections

The Screw of Nos. 41, 43 and 45 are made of special bronze alloy (solid, not plated or coated) that resists spatter. They are large in diameter to prevent bending or breaking. Oscillating (ball and socket) tip is steel—put on to stay. Frames are forged steel.

No. 41 Regular Duty Packed 1 per Box

Opening, Inches	Depth, Inches	Screw Diam.	Test Load, Pounds	Wt., lbs., per Box
2	1 3/4	1/2"	2,700	7/8
3	2 1/4	5/8"	3,000	1 3/4
4	2 1/2	5/8"	3,700	2 1/4
6	2 3/4	3/4"	4,500	3 3/4

No. 45 Deep Reach Packed 1 per Box

Opening, Inches	Depth, Inches	Screw Diam.	Test Load, Pounds	Wt., lbs., per Box
2	2	1/2"	2,500	1 1/8
3	3	5/8"	2,700	2 1/8
4	4	5/8"	3,400	3 1/2

No. 43 Heavy Duty Packed 1 per Box

Max. Opening,	Min. Opening	Depth, Inches	Screw Diam.	Test Load, Pounds	Wt., lbs., per Box
4"	0	2 1/2	7/8"	10,000	4 3/4
6"	0	2 3/4	1"	11,250	6 1/4
8"	2"	2 3/4	1"	12,500	7 3/8
10"	3"	3	1 1/8"	13,750	10 1/8
12"	5"	3	1 1/8"	15,000	11

Depth is from center of screw to frame



No. 400S
Cadmium Plated
Spatter Resisting

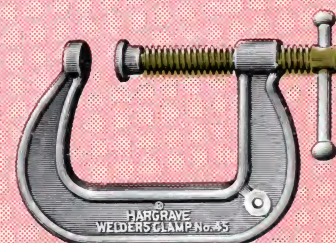


No. 40S
Cadmium Plated
Spatter Resisting

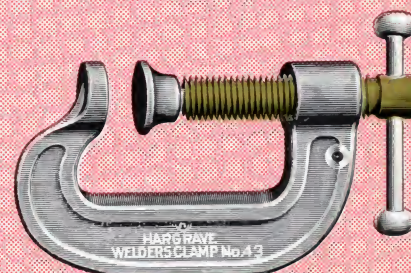
DRILLED FRAMES— SPATTER RESISTING SCREWS



No. 41



No. 45



No. 43



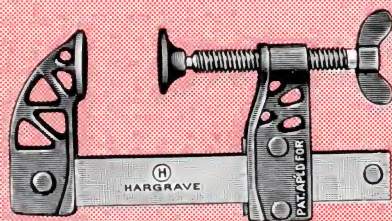
QUICK CLAMPS

Especially useful in pattern making, boat and shipbuilding, automobile body, airplane and general wood working. Hargrave Quick Clamps take up less room, are a great time saver over ordinary "C" clamps. Patented construction of Frame and Foot enables these Clamps to withstand great strain without twisting. Can be instantly applied or removed by hand. Clutch will not slip or bind. Rigid at any opening.

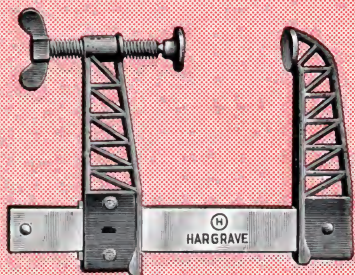
BAR—High carbon manganese, rolled from special analysis steel. **FRAME** and **FOOT**—Best grade malleable. **SCREW**—Specially treated steel with "Acme" thread; has long bearing, insuring long life.



Nos. 496-506 Patterns
(Movable frame, Stationary foot)
(Wood Handle)



Nos. 498-500-514 Patterns
(Movable frame—Stationary foot)



Nos. 502-508-510-512 Patterns
(Movable frame, Stationary foot)



Nos. 499-501-503 Patterns
(Stationary frame—Movable foot)

No. 496

Bar, $\frac{1}{4}$ " x $\frac{3}{4}$ ". Depth, $2\frac{1}{2}$ ".

Opening, Inches	Wt., lbs., Each
4	1
6	$1\frac{1}{8}$
8	$1\frac{1}{4}$
12	$1\frac{1}{2}$
18	$1\frac{3}{4}$
24	$2\frac{1}{8}$

No. 506

Bar, $\frac{1}{4}$ " x 1". Depth, $3\frac{1}{2}$ ".

Opening, Inches	Wt., lbs., Each
6	$2\frac{1}{8}$
8	3
12	$3\frac{3}{8}$
18	$3\frac{1}{2}$
24	$4\frac{1}{8}$
30	$4\frac{1}{2}$

DEPTH
Is distance from
center of screw to
bar.

No. 498

Bar, $\frac{1}{4}$ " x 1". Depth, 2".

Opening, Inches	Wt., lbs., Each
4	$2\frac{1}{4}$
6	$2\frac{3}{8}$
8	$2\frac{5}{8}$
12	3
18	$3\frac{1}{4}$
24	$4\frac{1}{8}$
30	$4\frac{5}{8}$

No. 500

Bar, $\frac{1}{4}$ " x $1\frac{1}{2}$ ". Depth, $2\frac{1}{2}$ ".

Opening, Inches	Wt., lbs., Each
6	$3\frac{5}{8}$
8	$3\frac{7}{8}$
12	$4\frac{3}{8}$
18	5
24	$5\frac{3}{4}$
30	$6\frac{3}{8}$
36	$7\frac{1}{8}$

No. 514

Bar, $\frac{3}{8}$ " x $1\frac{3}{4}$ ". Depth, 3".
Especially designed for Heavy Work

Opening, Inches	Wt., lbs., Each
6	$6\frac{5}{8}$
8	7
12	$7\frac{5}{8}$
18	$8\frac{3}{8}$
24	10
36	$12\frac{1}{4}$
48	$14\frac{1}{2}$

No. 502

Bar, $\frac{3}{8}$ " x $1\frac{3}{4}$ ".
Depth, $4\frac{1}{2}$ ".

Opening, Inches	Wt., lbs., Each
6	$5\frac{7}{8}$
8	$6\frac{1}{4}$
12	$7\frac{1}{2}$
18	$8\frac{1}{8}$
24	$9\frac{1}{8}$
36	$11\frac{1}{2}$
48	$13\frac{3}{4}$

No. 508

Bar, $\frac{3}{8}$ " x $1\frac{3}{4}$ ".
Depth, 6".

Opening, Inches	Wt., lbs., Each
6	7
8	$7\frac{1}{2}$
12	$8\frac{1}{4}$
18	$9\frac{3}{8}$
24	$10\frac{1}{4}$
36	$12\frac{1}{4}$

No. 510

Bar, $\frac{1}{2}$ " x 2".
Depth, 9".

Opening, Inches	Wt., lbs., Each
6	12
8	$12\frac{1}{2}$
12	$13\frac{1}{2}$
18	$15\frac{1}{2}$
24	17

No. 512

Bar, $\frac{1}{4}$ " x $1\frac{1}{2}$ ".
Depth, 4".

Opening, Inches	Wt., lbs., Each
6	4
8	$4\frac{1}{4}$
12	$4\frac{5}{8}$
18	$5\frac{1}{4}$
24	$5\frac{3}{8}$

No. 499

Bar, $\frac{1}{4}$ " x 1". Depth, 2".

Opening, Inches	Wt., lbs., Each
4	$2\frac{1}{4}$
6	$2\frac{3}{8}$
8	$2\frac{5}{8}$
12	$2\frac{7}{8}$
18	$3\frac{1}{2}$
24	4
30	$4\frac{1}{2}$

No. 501

Bar, $\frac{1}{4}$ " x $1\frac{1}{2}$ ". Depth, $2\frac{1}{2}$ ".

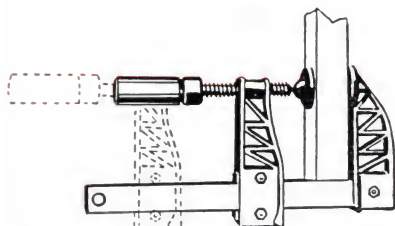
Opening, Inches	Wt., lbs., Each
6	$3\frac{3}{4}$
8	4
12	$4\frac{3}{8}$
18	5
24	$5\frac{1}{2}$

No. 503

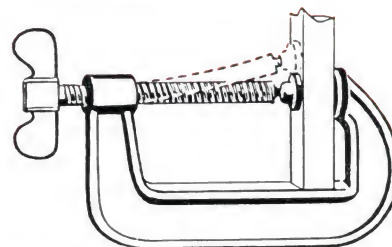
Bar, $\frac{3}{8}$ " x $1\frac{3}{4}$ ". Depth, $4\frac{1}{2}$ ".

Opening, Inches	Wt., lbs., Each
6	$6\frac{1}{4}$
8	$6\frac{1}{2}$
12	$7\frac{3}{8}$
18	$8\frac{1}{2}$
24	$9\frac{1}{2}$

All Quick Clamps Packed in Bulk



Note how bearing and pressure tip of Quick Clamp slides down to work eliminating possibility of bent screws.



Screw of conventional "C" clamp is ruined when extreme pressure is applied on same thickness of work.



No. 22 SAW VISE OR CLAMP

Clamps on any Board or Bench

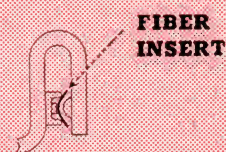
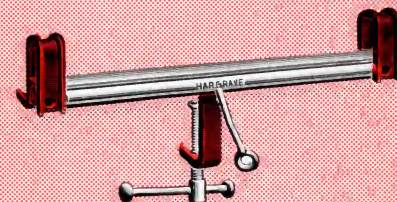
Filing space is $10\frac{1}{2}$ " long.

Substantially constructed to assure long, satisfactory service, the Hargrave Saw Vise holds the saw between a strong steel channel section with fibre insert and eccentric rod. This fibre insert, which resists oil and grease, is securely riveted in four places to the channel section, affording a double grip on the saw and completely eliminating any chatter.

Any standard saw set can be used with this Vise or Clamp

Clamping arm and screw folds against channel length for compact storage.

No. 22, Packaged 1 per box; Wt. per box $2\frac{3}{8}$ lbs.



FIBER INSERT

End view shows fibre insert in channel section which grips the saw in two places when eccentric rod is engaged against the saw.

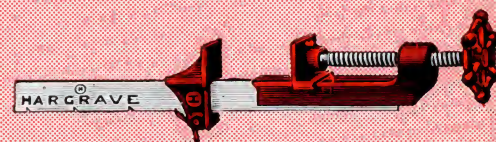
No. 458 LIGHT DUTY JOINERS' BAR CLAMP

For Speed in Light Clamping Operations

Quickly adjusted; strong, light and durable. This Bar Clamp is intended for clamping where speed and rapidity of handling are more necessary than power. It has high-carbon steel bar; Steel Screw is heat-treated with "Acme" thread. Frame, Tip, Slide and Handle are malleable. Pawl is steel.

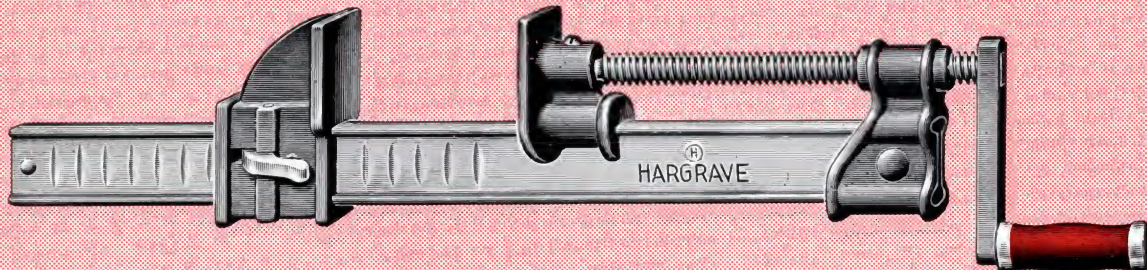
General Specifications

Opening, Feet	Clamping Surfaces	Screw Dia.	Bar Dimensions	Wt., lbs., Each
2	1 $\frac{1}{4}$ " Deep x 1 $\frac{3}{8}$ " Wide	$\frac{1}{2}$ "	$\frac{3}{16}$ " x 1 $\frac{1}{8}$ "	3 $\frac{3}{4}$
3	" " " "	$\frac{1}{2}$ "	" "	4





No. 640 Regular Duty Improved "I" Bar Clamp



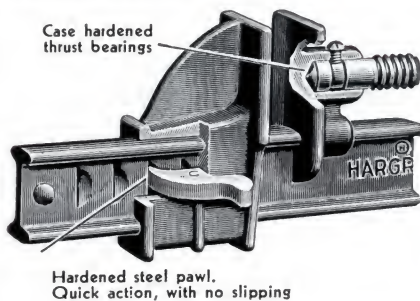
The No. 640 is a rapid, powerful clamp designed and constructed for the hard, everyday grind of production work. Exclusive features of superiority have made this clamp the choice of the world's largest users.

No other Clamp has this Patented Locking Device

It affords a positive stop—cannot bind or slip, yet releases readily.

Heavy, tempered steel pawl bears against body of slide — nothing to break or wear out. No clamping pressure on pin.

Case - hardened thrust bearing in tip centers the screw and practically eliminates wear at this point.



SPECIAL HANDLES

No. 18
All-Metal
"T" Handle



No. 19
Swivel Lever
Handle



The No. 18 Metal "T" Handle can be furnished without extra charge if specified. No. 19 Lever Handle can be furnished special. Ask for price when required.

CONSTRUCTION FEATURES

BAR— $\frac{5}{8}$ x $1\frac{1}{2}$ x $\frac{1}{8}$ -inch web. Shaped to stand the greatest strain for the weight. Wide, smooth flange will not mar the work.

NOTCHES—Formed in web, leaving the bar full strength as no metal is removed. Spaced $\frac{1}{2}$ -inch apart. Quick action, no slipping. This is a Patented Feature.

SLIDE—Malleable iron. Cannot slip or bind. Always easily released. Heavy, tempered steel pawl engages the notches, making a positive stop and insuring years of service without repairs. (See sectional view above). Clamping surfaces, $1\frac{1}{8}$ -inches deep, $1\frac{1}{8}$ inches wide.

TIP—Malleable iron. Has case-hardened thrust bearing for end of screw, practically eliminating wear. Long Yoke prevents binding on bar when clamping thin stock.

SCREW—Steel, $\frac{5}{8}$ -inch diameter, with deep-cut "Acme" thread. Specially treated to prevent bending and battering of threads.

HANDLE—Steel, with wood grip, reinforced with heavy steel ferrule and cap to prevent breaking. (No. 18 or No. 19 Handles available. See illustration above).

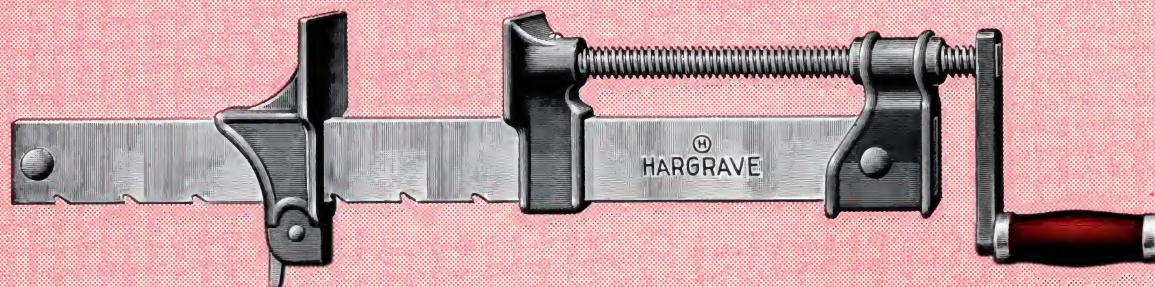
General Specifications

Opening, Feet	Clamping Surface	Screw Diameter	Bar Dimension	Wt. lbs., Each
2	$1\frac{1}{8}$ " Deep x $1\frac{7}{8}$ " Wide	$\frac{5}{8}$ "	$\frac{5}{8}$ " x $1\frac{1}{2}$ " x $\frac{1}{8}$ "	7
2 $\frac{1}{2}$	" "	"	"	7 $\frac{3}{4}$
3	" "	"	"	8 $\frac{1}{4}$
4	" "	"	"	9 $\frac{1}{2}$
5	" "	"	"	10 $\frac{3}{4}$
6	" "	"	"	12
7	" "	"	"	13 $\frac{1}{4}$



Perfection Bar Clamps

No. 440 Medium Duty—No. 450 Heavy Duty

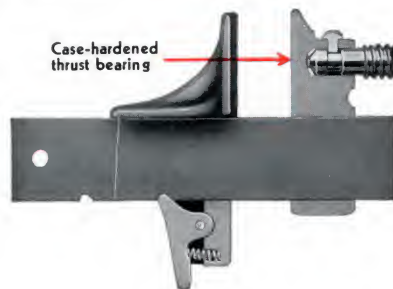


STURDILY CONSTRUCTED FOR LONG, SATISFACTORY SERVICE

This is a strong, durable, convenient, general purpose clamp. Especially useful in all wide clamping, such as sash, doors, blinds, furniture, etc. Made in two patterns—the Medium Duty and the Heavy Duty.

POSITIVE LOCK RELEASES EASILY

Steel pawl rests in socket in slide. This prevents the rivet from taking any clamping strain. Practically unbreakable.



SPECIAL HANDLES

No. 18
All-Metal
"T" Handle



No. 19
Swivel Lever
Handle



The No. 18 Metal "T" Handle can be furnished without extra charge if specified for No. 440; there is a small additional charge if specified on No. 450. No. 19 Lever Handle can be furnished special on either No. 440 or No. 450; ask for price when required.

CONSTRUCTION FEATURES

BARS—High carbon manganese steel, giving great strength.

FRAMES—Best grade malleable iron.

SLIDES—Best grade malleable iron. Cannot slip or bind; easily released. Pawl for slide is tempered steel. (See illustration above).

TIPS—Best grade malleable iron. Has case-hardened thrust

bearing for end of screw, insuring long, satisfactory service.

SCREWS—Steel, with deep-cut "Acme" thread and extra long bearing, insuring added life to the clamp.

HANDLES—Steel, with wood grip, reinforced with heavy steel ferrule and cap to prevent breaking. (No. 18 or No. 19 Handles available. See illustration above.)

General Specifications

No. 440 MEDIUM DUTY

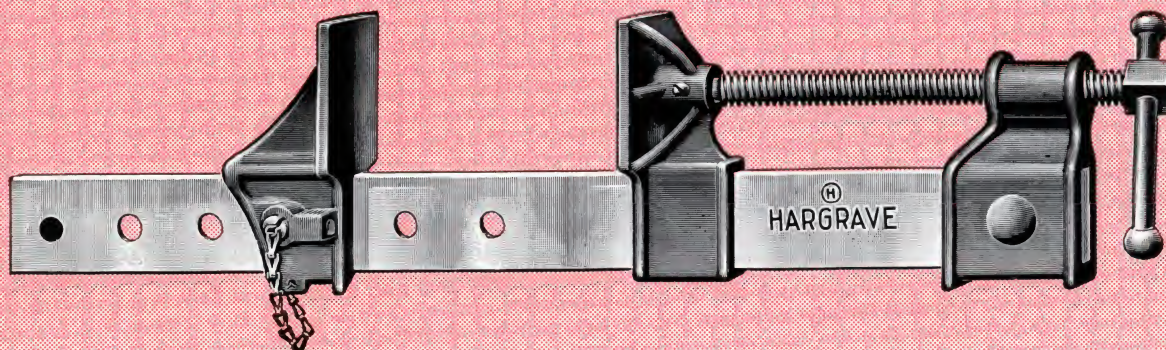
Opening, Feet	Clamping Surfaces	Screw Diameter	Bar Dimension	Wt., lbs. Each
2	2" Deep x 1 7/8" Wide	5/8"	1/4 x 1 1/2"	6 1/4
2 1/2	"	"	"	6 3/4
3	"	"	"	7 1/4
4	"	"	"	8 3/4
5	"	"	"	10
6	"	"	"	11 1/4

No. 450 HEAVY DUTY

Opening, Feet	Clamping Surfaces	Screw Diameter	Bar Dimension	Wt., lbs. Each
3	2 1/4" x 2 1/4"	3/4"	3/8" x 1 3/4"	13 1/2
4	"	"	"	15 3/4
5	"	"	"	18
6	"	"	"	20
7	"	"	"	22 1/4
8	"	"	"	24 1/2
10	"	"	"	28 1/2



No. 750 Extra Heavy Duty Bar Clamp

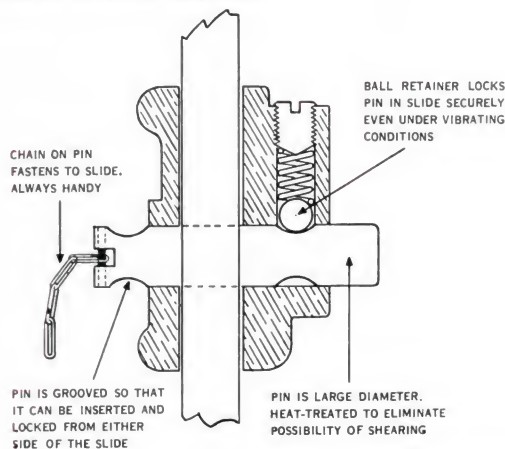


Note Weight Each Before Ordering

Designed especially for the heaviest type of work such as truck and trailer body work, tank construction and other heavy steel fabrication.

CONSTRUCTION FEATURES

Cross section through center of Bar and Slide shows important locking features.



BAR—Extremely stiff, high-carbon steel. Holes spaced $2\frac{1}{2}$ " on centers.

FRAME—High-grade malleable iron. Screw bearing surface is $2\frac{1}{2}$ " long.

SLIDE—High-tensile malleable iron reinforced where extra strength is needed. Will not stick when pressure released.

TIP—High-grade malleable. Hardened steel insert in tip takes end thrust of screw, insuring long clamp life.

SCREW—Steel, 1" diameter, with "Acme" thread.

General Specifications

Note Weight Each Before Ordering

Opening, Feet	Clamping Surfaces	Screw Diameter	Bar Dimension	Wt., lbs., Each
3	4" Deep x 3" Wide	1"	$\frac{5}{8}$ " x $2\frac{1}{2}$ "	33 $\frac{3}{4}$
4	" "	"	"	38 $\frac{1}{2}$
5	" "	"	"	43 $\frac{3}{4}$
6	" "	"	"	48 $\frac{1}{4}$
7	" "	"	"	53 $\frac{1}{4}$
8	" "	"	"	57 $\frac{1}{2}$
10	" "	"	"	69
12	" "	"	"	76 $\frac{3}{4}$

NOTE: This is the strongest and heaviest bar clamp on the market. Check specifications carefully before ordering.

Clamp Fixtures and Press Screws

No. 600—Fits $\frac{3}{4}$ " Pipe

No. 600 is the most popular Clamp Fixture. Easy to assemble on any length of $\frac{3}{4}$ " pipe. All parts are best grade malleable and finished in attractive red, baked-on enamel, except the Screw which is steel and the Cam which is hardened steel. Extra heavy black iron pipe is recommended for ordinary clamping, and double extra when greater pressure is required. Slide will not slip under pressure; will not stick when pressure is released.

Clamping Surfaces $1\frac{3}{4}$ " x $1\frac{3}{4}$ "
Screw—Steel, with "Acme" thread $\frac{5}{8}$ " Diameter
Cam Hardened Steel, (trigger type) Milled Teeth

Packaged—1 set per box (12 boxed sets per carton). Weight per box: $2\frac{1}{2}$ lbs.

A Set of fixtures consists of irons complete to make ONE CLAMP (frame, screw, handle, tip and slide) without the pipe.

No. 620—No. 621 Fit $\frac{1}{2}$ " Pipe

(Identical except for the Clamping Tips)

No. 620 and No. 621 are easy to assemble on any length of $\frac{1}{2}$ " pipe. Frame and Slide are best grade malleable, finished in attractive red baked-on enamel.

Frames are tapped for standard pipe thread. **Screws** are steel, "Acme" thread, with Sliding Pin Handle. **Slides** will not slip under pressure; will not stick when pressure is released. **Cams** are hardened steel (trigger type) with milled teeth.

Stock No.	Clamping Surfaces	Screw Diameter	Quantity Per Box	Wt., lbs. Per Box
620	Slide $1\frac{1}{2}$ " x Tip $1\frac{1}{2}$ "	$\frac{1}{2}$ "	1 Set	$1\frac{3}{8}$
621	Slide $1\frac{1}{2}$ " x Tip $1\frac{5}{8}$ "	$\frac{1}{2}$ "	1 Set	$1\frac{1}{8}$

A set of fixtures consists of irons complete to make ONE CLAMP (frame, screw, handle, tip and slide) without pipe.

No. 615—Fits Wood Bar $1\frac{1}{8}$ " x $2\frac{1}{4}$ "

No. 615 is easy to assemble on any length wood bar, $1\frac{1}{8}$ " x $2\frac{1}{4}$ ". Frame, Tip and Slide are of best grade malleable, natural finish. Slide will not slip under pressure. (Furnished with either Wheel or Crank type handle).

Clamping Surfaces $1\frac{1}{2}$ " Wide, $1\frac{7}{8}$ " Deep
Screw—Steel, with "Acme" thread $\frac{1}{2}$ " Diameter

Packed in bulk. Weight each: 2 lbs.

A set of fixtures consists of irons complete to make ONE CLAMP (frame, screw, handle, tip and slide) without wood bar.

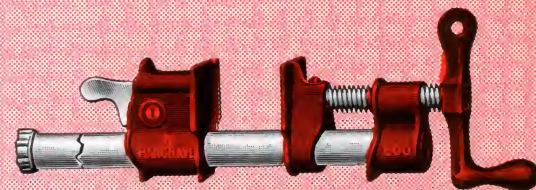
Press Screws

Nos. 36-T and 36-W Press Screws are for use in connection with Clamping Jigs.

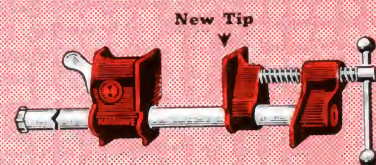
Screw is steel, $\frac{5}{8}$ " diameter, with 6-inch travel. Thread is "USS". Tip is $1\frac{1}{4}$ " diameter. THREADED NUT drives in a 1" hole and can be held firmly by 2 screws. (Special longer travel screw can be furnished if desired).

Screw, Handle, Nut and Tip can be furnished separately.

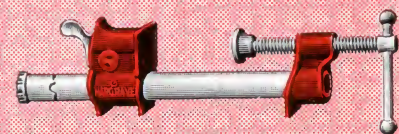
Packed in bulk. Weight each: $1\frac{1}{4}$ lbs.



No. 600
(Pipe not included)



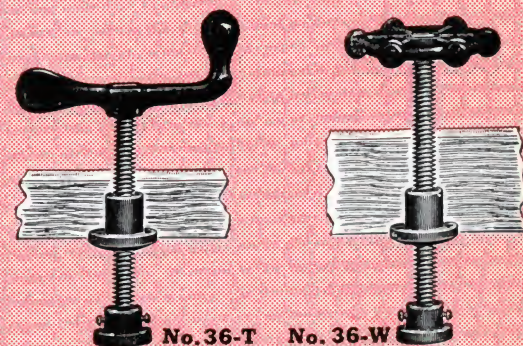
No. 620
Clamping Tip is same size as Slide
(Pipe not included)



No. 621
Oscillating Ball & Socket Tip - Put on to Stay
(Pipe not included)



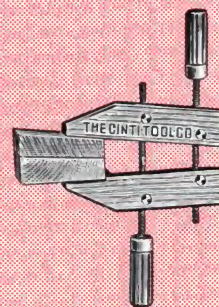
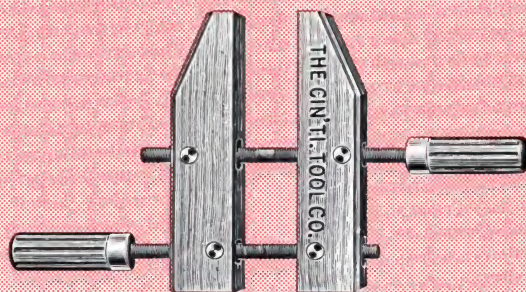
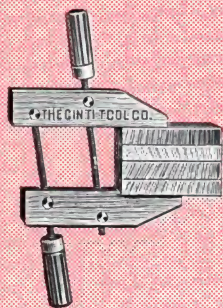
No. 615 No. 615-18 $\frac{1}{2}$
(Wood Bar not included)



No. 36-T No. 36-W



Steel Spindle Hand Screws



Hargrave Hand Screws are conventional in size and proportion; yet they have refinements not found in other hand screws.

JAWS—Specially selected Hard Maple, properly seasoned and oiled, and are tested for strength; those that do not meet the rigid Hargrave Production Test are eliminated before being placed in stock.

SPINDLES—Cold-rolled Steel, with "Acme" thread insures longer wear with less frictional resistance than the "V" thread commonly used.

HANDLES—The Handles of Hargrave Hand Screws are fluted, thus affording a better grip under all conditions.

STOCK No.	704	706	708	710	712	714	716	718
Length of jaws, inches	4	6	8	10	12	14	16	18
Opening, inches	2	3	4½	6	8½	10	12	14
Depth of jaw to top screw, inches	1⅞	2⅜	4⅞	5¼	5⅜	6⅜	7⅞	8⅞
Quantity per carton	6	6	6	6	6	4	4	4
Weight, lbs., per carton	3	6¼	12¼	15⅞	25⅞	21⅞	29½	33½

NON-ADJUSTABLE PATTERN (opening and closing the jaws parallel) can also be furnished.

Please Order in Carton Lots

No. 780 Miter-Frame Clamp

HANDY • EASY TO OPERATE • FLEXIBLE CAPACITY

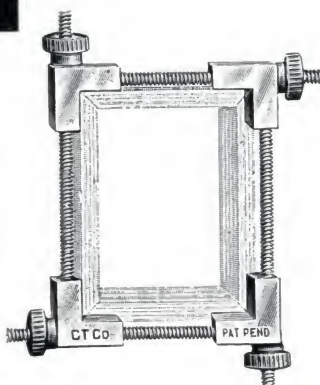
Perfect Joints—4 Corners at Once—No Marring of Material

This is the answer to clamping all Four Corners at the same time without marring the most highly finished work.

Quickly adjusted to any square or rectangle from 2" to 14". (Capacity can be increased to any desired dimension by using No. 780-E Extension Screws with Couplings shown below.) Absolutely accurate. Holds firmly until released—No slipping. When dismantled can be stored on shelf or in tool box in space of only 14½" x 2".

ADJUSTING NUTS—High-grade steel; knurled for good grip; can be quickly twirled to position.

CORNER BLOCKS—Aluminum alloy, light but strong. Screws—¼" dia., high-grade steel.



No. 780-E Extension Screws with Hexagon Couplings



Furnished in sets of four (4). Two or more may be used. Each set increases clamping capacity of the No. 780 Clamp another 12 inches making it possible to accurately clamp any dimension square or rectangle desired.

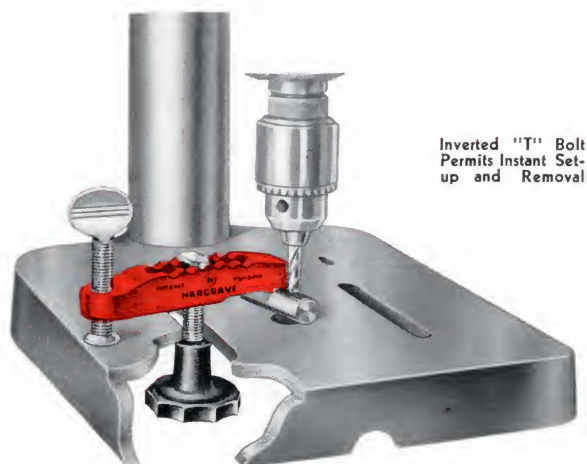
No. 780	Quantity per Box: 1	Wt., per Box: 1⅛ lbs.
No. 780-E	Quantity per Box: 1 set (4)	Wt., per Box: ¾ lbs.



No. 122 Handy Drill Press Clamp

A DRILL PRESS NECESSITY

Saves Time • Prevents Injuries
Holds All Shapes • Instant Installation

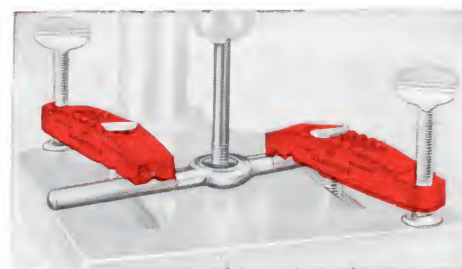


Inverted "T" Bolt
Permits Instant Set-
up and Removal

General Specifications

Overall Length	Width	Number Per Box	Weight lbs., Per Box
5 3/8"	1 5/16"	1	1 1/2

Difficult Jobs Easily Held



FROM PAPER THICKNESS TO 2 1/2"
PRODUCTION JIGS QUICKLY HELD
NO HOLES NEEDED IN ANGLE PLATE

No. 122 Handy Drill Press Clamp is an essential accessory to drill presses for light to medium duty drilling operations. The inverted "T" Bolt Head permits instant installation or removal. The large, knurled handle can be quickly twirled to position for applying desired pressure and for release. Made of Grey Iron and Steel, affording sturdiness and durability. Plated steel screws prevent rusting.

No. 1220 DRILL PRESS CLAMP DISPLAY and ASSORTMENT

AN ATTRACTIVE SELLING AID ILLUSTRATING ACTUAL APPLICATION

Display Stand FREE with following Low-Cost Assortment consisting of:

Four (4) No. 122 Drill Press Clamps, Three (3) of which are in regular boxes and One (1) mounted on Display Stand. All packed in one carton.

Shipping weight: Approx. 7 lbs.

The clear plastic Stand holds an attractive colored identification card with copy, together with small "Take One" folders. Overall height approximately 10 3/4" x 6" wide.

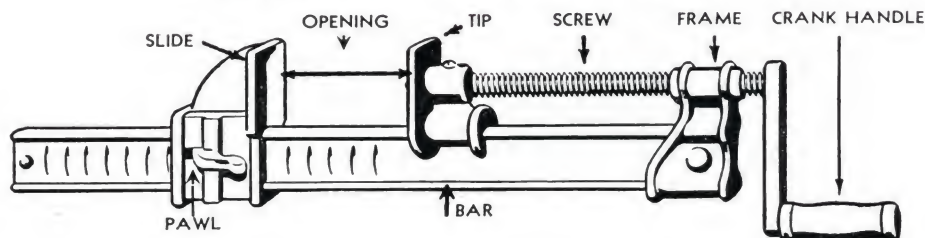


Suggested Care and Glossary of Clamp Terms

SUGGESTIONS FOR CARE

1. Handle your clamps with a reasonable amount of care. Rough handling can damage a clamp or any other tool.
2. Keep your clamps clean and occasionally lubricate lightly all moving parts. This will make them last longer and work more smoothly. After oiling be sure there is no oil on any parts that will come in contact with the work.
3. Use clamps of the proper capacity for the job. Do not use a large "C" clamp on thin stock. Do not use a light service clamp on heavy work.
4. Keep your clamps in convenient racks when not in use, rather than throwing them in a pile. This will protect them from damage and make them readily accessible when you need them.

GLOSSARY OF CLAMP TERMS



DEPTH—The distance from the center of the screw to the inner edge of the frame in the case of "C" Clamps, and to the inner edge of the bar on Quick Clamps.

THE FOOT—The flat surface at the lower end of the "C" Clamp frame.

FRAME—That part of a "C" Clamp or bar clamp which has the threaded bearing for the adjusting screw.

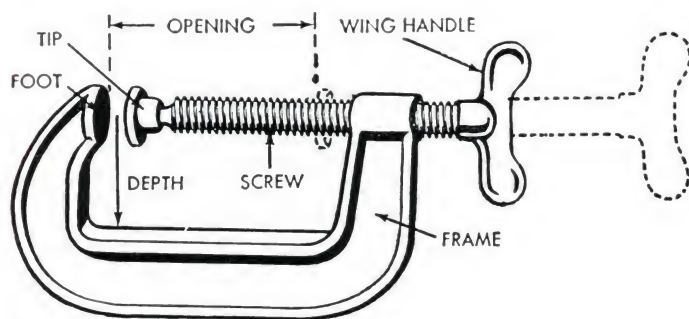
OPENING—The distance between jaws with the clamp opened to its maximum capacity.

PAWL—The engaging "lock" on Slide of a bar clamp to prevent slipping when pressure is applied with Tip by the Screw.

SCREW—For applying required clamping pressure. This is turned by various methods on different patterns of Clamps. Different types of handles are illustrated below.

SLIDE—The lower jaw on the steel bar clamps, which is adjusted on the bar to an approximate opening before pressure is applied with the screw.

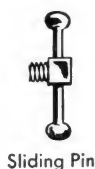
TIP—The pressure plate, or jaw, on the end of the screw.



Crank



Swivel Lever



Sliding Pin



Wing



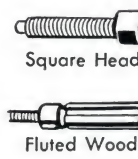
Pin



Wheel



All Metal "T"



Square Head



Fluted Wood



HARGRAVE Selling Aids

Available to
stocking distributors



Every effort is made to furnish our distributors with catalogs, catalog pages, inserts and envelope stuffers in quantities desired. There is no charge for im-
printing.

Electros, as well as proof material for offset reproduc-
tion, are available on the entire Hargrave line of
tools.



PRO-TECTO-HED[®] (Patented)

CHISELS AND PUNCHES

For Greater Safety • For Longer Life

HARGRAVE PRO-TECTO-HED Chisels and Punches present a revolutionary "head". Only HARGRAVE offers the SAFETY that can be had with PRO-TECTO-HED.

The raised (upset) head "cushions" the blows defeating mushrooming and chipping, thus prolonging the life of the tool many times.

ACTUAL COMPARISON AFTER 15,000 BLOWS WITH THE SAME HAMMER



CONVENTIONAL HEAD



HARGRAVE PRO-TECTO-HED

All Hargrave Chisels and Punches are trip-hammer forged from special analysis alloy steel. The designs have been carefully worked out with the aid of mechanics who use such tools. You will find them properly proportioned and balanced.

Each tool is properly tempered for the work for which it is intended, tested before being packed, and is fully guaranteed as to workmanship and material.

THEY MUST BE TOUGH TO STAND THIS TEST!

We test the cutting edge on a heat-treated spring steel bar which is itself hard enough to cut open hearth steel

Each chisel must cut a chip from this bar, and the edge must stand it. Each punch must stand a similar test for hardness and toughness.



A
GOOD "HED"
TO HAVE
IN YOUR
BUSINESS!



INDIVIDUALLY
TESTED

TRIP HAMMER
FORGED FROM
SPECIAL ANALYSIS
STEEL

WHY WORRY ABOUT
REPLACEMENT OF
UNTESTED TOOLS

Remember:

Hargrave PRO-TECTO-HED Chisels and Punches conform with Federal Specifications for Head and Cutting Edge Hardness.

HARGRAVE
PRO-TECTO-HED[®]
 No. 1950
 Chisel and Punch Assortment



Complete Display FREE with Assortment
 —Attractive With Versatile Adaptability

A THREE-IN-ONE DISPLAY

1. COUNTER, SHELF or WINDOW—Use the No. 1950 Display Assortment as shown.

2. PERFORATED BOARD—The Tool Fixture Holder and tools can be simply lifted off the Easel Board for hanging on your Perforated Board; it is applicable to either $\frac{1}{8}$ " or $\frac{1}{4}$ " Perforated Board. The back-plate of the Tool Fixture Holder is permanently attached to the removable Fixture and shows stock number, size and price for each tool. (When price changes occur, revised labels will be made available at no cost.)

3. HANGING ANYWHERE—Remove the Tool Fixture Holder as above, and by using the two Handy Hook Holders the Tool Fixture Holder is adaptable for hanging on cabinets, islands, doors, walls, etc.

TWO HANDY HOOK HOLDERS
 INCLUDED WITH EACH ASSORTMENT ➔



No. 1950 PRO-TECTO-HED ASSORTMENT Contains 30 of the Most Popular Chisels and Punches			
Size	Stock No.	Quantity	Standard Package
$\frac{3}{8}$ "	200 Cold Chisel	4	12
$\frac{1}{2}$ "	200 Cold Chisel	4	6
$\frac{5}{8}$ "	200 Cold Chisel	4	6
$\frac{3}{4}$ "	200 Cold Chisel	4	6
$\frac{1}{4}$ "	293 Cape Chisel	1	6
$\frac{1}{4}$ "	233 H-R Chisel	1	6
$\frac{1}{4}$ "	243 Dia. Pt. Chisel	1	6
$\frac{1}{8}$ "	263 Solid Punch	1	12
$\frac{1}{8}$ "	263 Solid Punch	2	12
$\frac{1}{4}$ "	263 Solid Punch	2	6
$\frac{3}{8}$ "	284 Center Punch	2	12
$\frac{1}{8}$ "	2866 Pin Punch	1	12
$\frac{1}{8}$ "	2866 Pin Punch	1	12
$\frac{1}{4}$ "	2866 Pin Punch	1	12
$\frac{3}{8}$ "	2873 Prick Punch	1	12
TOTAL TOOLS.....30			
CARTON SIZE 19 $\frac{1}{4}$ "x10 $\frac{1}{2}$ " • SHIPPING WEIGHT 11 $\frac{3}{4}$ Lbs.			



The No. 1950 Display is furnished Free with the Assortment listed. This Display includes the removable perforated board Tool Fixture Holder (3 $\frac{1}{2}$ " x 8 $\frac{1}{4}$ "); $\frac{1}{8}$ " Duron Board (10" x 11 $\frac{7}{8}$ "); one Easel; two (2) Handy Hook Holders.

PRO-TECTO-HED KITS



◀ Handy Kit No. 150—CHISELS
 Contains one each of following:
 No. 200— $\frac{1}{4}$ " Cold Chisel
 No. 200— $\frac{3}{8}$ " Cold Chisel
 No. 200— $\frac{1}{2}$ " Cold Chisel
 No. 200— $\frac{5}{8}$ " Cold Chisel

Handy Kit No. 160—CHISELS and PUNCHES
 Contains one each of following:
 No. 200— $\frac{3}{8}$ " Cold Chisel
 No. 200— $\frac{5}{8}$ " Cold Chisel
 No. 263— $\frac{3}{8}$ " Solid Punch
 No. 284— $\frac{3}{8}$ " Center Punch



◀ Handy Kit No. 140—CHISELS and PUNCHES
 Contains one each of the following:

No. 2866— $\frac{3}{8}$ " Pin Punch	No. 243— $\frac{3}{8}$ " Dia. Point Chisel
No. 2866— $\frac{1}{8}$ " Pin Punch	No. 233— $\frac{1}{8}$ " Half Round Chisel
No. 263— $\frac{1}{8}$ " Solid Punch	No. 200— $\frac{1}{4}$ " Cold Chisel
No. 284— $\frac{3}{8}$ " Center Punch	No. 200— $\frac{1}{2}$ " Cold Chisel
No. 223— $\frac{1}{8}$ " Cape Chisel	No. 200— $\frac{5}{8}$ " Cold Chisel



For Greater Safety • For Longer Life

PRO-TECTO-HED® CHISELS

STOP MUSHROOMING AND CHIPPING

Trip hammer forged from Special Alloy Steel

The careful design and high-grade forging of these tools give them a better balance and proportion than other makes.

Hargrave Chisels and Punches are tested for Hardness, Toughness and Freedom from flaws. Only those which pass our rigid tests (see page 28) go into stock. Finished in attractive blue baked-on enamel body with polished blade.

No. 200 COLD CHISEL (Individually Tested)



Cutting Edge, Inches.....	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1
Length, Inches.....	5	5	5	6	6 1/2	7 1/2	8	8 1/2
Quantity Per Box.....	12	12	12	6	6	6	6	6
Wt., lbs., Per Box.....	1	1	1 1/2	1 3/8	2 1/4	4 1/8	6 1/4	8 5/8

No. 201 SOIL PIPE CHISEL (Individually Tested)



Cutting Edge, Inches.....	3/4	7/8
Length, Inches.....	7 1/2	8
Quantity Per Box.....	6	6
Wt., lbs., Per Box.....	4 1/8	6 1/4

No. 205 COLD CHISEL (Individually Tested) (EXTRA LONG)

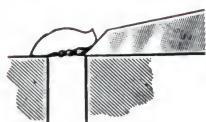


Size Inches	Quantity per Box	Wt., lbs.	Size, Inches	Packaged	Wt., lbs., Each
1/2 x 10	6	2 7/8 Per Box	1-1/4 x 18	Bulk	4 7/8
1/2 x 12	6	3 3/8 " "	3/4 x 24	"	2 1/4
5/8 x 12	6	4 3/8 " "	7/8 x 24	"	3 1/2
3/4 x 12	6	6 3/4 " "	1 x 24	"	4 3/8
7/8 x 12	6	9 5/8 " "	1-1/4 x 24	"	6 1/2
1 x 12	6	12 7/8 " "	1-1/2 x 24	"	9
3/4 x 18	Bulk	1 3/4 Each	1-1/4 x 36	"	9 7/8
7/8 x 18	Bulk	2 5/8 "	1-1/2 x 36	"	13 1/2
1 x 18	Bulk	3 1/4 "			

No. 580 RIVET BUSTER (Individually Tested)



Packed in bulk.



This tool is designed especially for cutting off rivet heads, bolt heads and similar shearing work for which a cold chisel should not be used. Specify it for such service.

Cutting Edge, Inches	Size of Stock, Inches	Length, Inches	Wt., lbs., Each
1/2	5/8	9	1 1/2
5/8	3/4	12	1 5/8
3/4	7/8	18	3 1/4

For Greater Safety - For Longer Life



PRO-TECTO-HED® CHISELS

STOP MUSHROOMING AND CHIPPING

Trip hammer forged from Special Alloy Steel

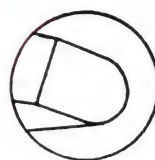
The careful design and high-grade forging of these tools give them a better balance and proportion than other makes.

Hargrave Chisels and Punches are tested for Hardness, Toughness and Freedom from flaws. Only those which pass our rigid tests go into stock. Finished in an attractive blue baked-on enamel body with polished tapers.



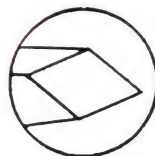
No. 223 CAPE CHISEL

(Individually Tested)



No. 233 HALF ROUND CHISEL

(Individually Tested)



No. 243 DIAMOND POINT CHISEL

(Individually Tested)



The following List applies to each of the three chisels shown above.

Cutting Edge, Inches	Size Stock, Inches	Length, Inches	Quantity Per Box	Wt., lbs. Per Box
1/8	5/16	4 1/2	12	1
3/16	3/8	5	12	1 3/4
1/4	1/2	6 1/2	6	1 7/8
5/16	5/8	7	6	3 1/4
3/8	5/8	7 1/2	6	3 1/2
1/2	3/4	8	6	6
5/8	3/4	8	6	6 1/2
3/4	7/8	8 1/2	6	8 1/2
7/8	1	9	6	12

Please order in PACKAGE quantities.



For Greater Safety • For Longer Life

PRO-TECTO-HED® CHISELS

STOP MUSHROOMING AND CHIPPING

INDIVIDUALLY TESTED

Hargrave All-Steel Wood, Wrecking, Floor and Utility Chisels are made for carpenters, electricians, plumbers, etc. The design, quality and temper of steel are such that they *will not break or take a set* when used as intended. The handles will *stand the use of a hammer* without breaking, making them much more durable than the wood handle chisels. Finished in attractive blue, baked-on enamel body with polished blades.

No. 577 All-Steel Wood Chisel

Cutting Edge, Inches	Size Stock, Inches	Length, Inches	Quantity Per Box	Wt., lbs., Per Box
1/2	7/16	8 1/2	6	2 5/8
3/4	5/8	10 1/2	6	4 5/8
1	5/8	10 1/2	6	5 1/2
1-1/4	3/4	10 1/2	6	7 7/8

Nos. 582-583 Wrecking Chisel

	Cutting Edge, Inches	Size Stock, Inches	Length, Inches	Quantity Per Pkg.	Wt., lbs., Per Pkg.
No. 582 —Straight	1 1/2	3/4	18	3	7
No. 583 —Bent	1 1/2	3/4	18	3	7

Nos. 950 - 952 Floor and Utility Chisels

	Width Blade, Inches	Size Stock, Inches	Length, Inches	Quantity Per Box	Wt., lbs., Per Box
No. 950 —2-1/2	2 1/2	5/8	11	6	7
No. 950 —3	3	5/8	12	6	8
No. 952 —2 3/4	2 3/4	3/4	12	6	11 1/8

These Floor and Utility Chisels have a thin blade, making them readily adaptable to any type work such as cutting tongues off floor boards and lifting them, or lifting molding strips, etc., without marring the surrounding surface. Particularly useful tools for carpenters, plumbers and electricians.

Blades are tempered to cut wire nails.

Not meant for use on concrete or stone.



No. 577

Nos. 582-583

No. 950

No. 952

For Greater Safety • For Longer Life



PRO-TECTO-HED® CHISELS

STOP MUSHROOMING AND CHIPPING

INDIVIDUALLY TESTED

Hargrave Tile, Plugging and Brick Chisels are trip-hammer forged from our special analysis alloy steel. They are carefully designed for the work for which they are intended and hammer tested for proper hardness and toughness before going into stock. Finished in attractive blue, baked-on enamel body with polished blades.

No. 962 TILE CHISEL

Cutting Edge, Inch	Length, Inches	Quantity per Box	Wt., lbs., per Box
1/4	5	12	1

No. 963 PLUGGING CHISEL

Cutting Edge, Inches	Size Stock, Inches	Length, Inches	Quantity Per Box	Wt., lbs., Per Box
3/16	1/2	10	6	3
1/4	5/8	10	6	4 1/2

No. 941 FLAT BRICK CHISEL

Cutting Edge, Inches	Size Stock, Inches	Length, Inches	Quantity Per Box	Wt., lbs., Per Box
1-1/8	7/8 x 3/8	12	3	3

No. 944 OCTAGON BRICK CHISEL

Cutting Edge, Inches	Size Stock, Inches	Length, Inches	Quantity Per Pkg.	Wt., lbs., Per Pkg.
1	5/8	12	3	3 3/8
1	5/8	18	3	5
1-1/4	3/4	24	3	9 1/2



No. 962



No. 963



No. 941



No. 944



For Greater Safety • For Longer Life

PRO-TECTO-HED® PUNCHES

STOP MUSHROOMING AND CHIPPING

Individually Tested

All Hargrave Pro-Tecto-Hed Punches are attractively finished in blue, baked-on enamel body with polished tapers.

No. 263 Solid or Starting Punch



Point, inches	1/16	1/8	5/32	3/16	1/4	5/16	3/8	1/2
Stock, inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{5}{8}$
Length, inches	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	$6\frac{1}{2}$	$6\frac{1}{2}$
Taper, inches	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{3}{4}$	$1\frac{3}{4}$
Quantity per Box	6	6	6	6	6	6	6	6
Wt., lbs., per Box	$\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$2\frac{7}{8}$	$3\frac{1}{2}$

Nos. 2864-6-9 Pin Punches



No. 2864—4 in.

Point, inches	1/16	3/32	1/8	5/32	3/16	7/32	1/4	5/16	3/8
Stock, inches	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$
Pin Length, inches	$\frac{1}{2}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{15}{16}$	1	1	1	1
Length, inches	4	4	4	4	4	4	4	4	4
Quantity per Box	12	12	12	12	12	12	12	6	6
Wt., lbs., per Box	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	1	$1\frac{1}{4}$

No. 2866—6 in.

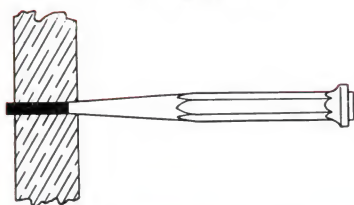
Point, inches	3/32	1/8	5/32	3/16	7/32	1/4
Stock, inches	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
Pin length, inches	$1\frac{11}{16}$	$1\frac{11}{16}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{7}{8}$	$1\frac{7}{8}$
Length, inches	6	6	6	6	6	6
Quantity per Box	12	12	12	12	12	12
Wt., lbs., per Box	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{7}{8}$	$1\frac{7}{8}$	2

No. 2869—9 in.

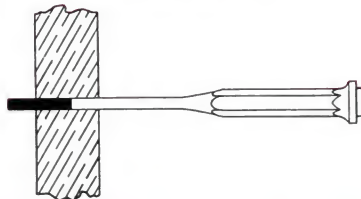
Point, inches	1/8	3/16	1/4	5/16	3/8
Stock, inches	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$
Pin length, inches	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
Length, inches	9	9	9	9	9
Quantity per Box	6	6	6	6	6
Wt., lbs., per Box	2	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{3}{8}$	$3\frac{1}{4}$

The Proper Use of Solid and Pin Punches

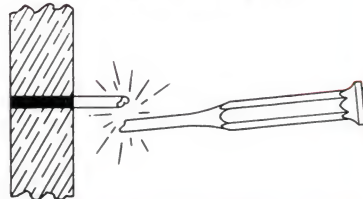
START PINS WITH
A SOLID PUNCH



THEN FOLLOW THRU
WITH PIN PUNCH



AVOID BENDING OR
BREAKING PIN PUNCH



For Greater Safety • For Longer Life



PRO-TECTO-HED® PUNCHES

STOP MUSHROOMING AND CHIPPING

Individually Tested

No. 630 Drift Punch



Point, inches	3/16	1/4	5/16	3/8
Stock, inches	5/8	5/8	5/8	3/4
Length, inches	10	10	10	10
Taper, inches	5 1/4	4 3/4	4 3/4	5
Quantity per Box	6	6	6	6
Wt., lbs., per Box	4 1/4	4 3/8	4 1/2	6 1/2

No. 620 Lining-up Punch

*(Available without Pro-Tecto-Hed for special lining-up jobs such as tank construction, etc.)



Point, inches	1/8	5/32	3/16	1/4	5/16	*	1/4	1/2
Stock, inches	3/8	1/2	5/8	5/8	3/4		3/4	7/8
Length, inches	9	10	12	12	12		18	18
Taper, inches	5	6 1/2	8 1/2	8 1/2	8 1/2		9 1/2	12
Quantity per Box	6	6	6	6	6		3	3
Wt., lbs., per Box	1 1/2	2 1/2	4 1/2	4 7/8	7		5 3/8	8

No. 284 Center Punch



Diameter of stock, inches	1/4	5/16	3/8	1/2	5/8
Length, inches	3 1/2	3 3/4	4 1/2	5 1/2	6 1/2
Dia. at top of short taper	5/64	3/32	1/8	7/32	3/8
Quantity per Box	12	12	12	6	6
Wt., lbs., per Box	3/4	7/8	1 5/8	1 3/4	3 1/4

No. 2873 Prick Punch



Diameter of stock, inches	1/4	3/8	1/2
Length, inches	4	5	6
Quantity per Box	12	12	6
Wt., lbs., per Box	3/4	1 3/4	1 3/4

No. 330 Pinch and Lining Bar



This handy tool is trip-hammer forged from an especially tough grade of steel and carefully heat-treated. It has many uses in lining and prying.

Length, Inches	Dia. Stock, Inches	Taper, Inches	Quantity, per Pkg.	Wt., lbs., Per Pkg.
15 1/2	1/2	5 3/8	3	2 1/4

HARGRAVE MASONRY DRILLS

**CUT
FASTER**

**CUT
LONGER**

**CUT
COSTS**

"V" Flat Masonry Drills



Hargrave patented "V-Flat" Star Drills for Faster Drilling

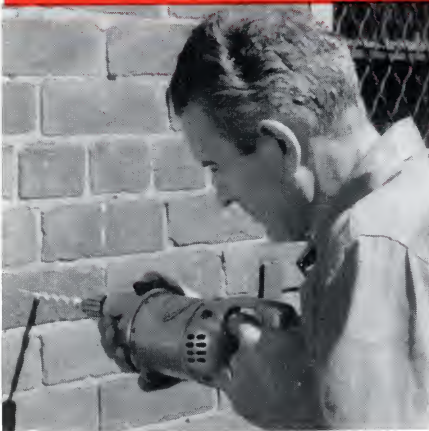


"V-Flat" in use with air hammer



"V-Flat" in use with electric hammer

Dust Ejector Drills - Carboloy Carbide Tipped



Regular length Dust Ejector drill in use



Deep, Round flutes assure continuous dust ejection drilling

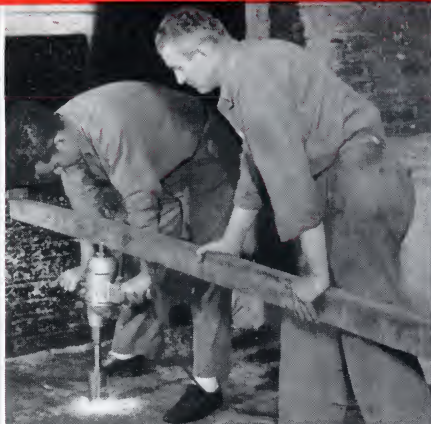


Dust Ejector extra length shank drill in use

Core Type Drills - Multiple Carbide Inserts



Multiple carbide tipped, super-bonded inserts, continuous wrap-around spiral, temper hardened



Improvising necessary pressure on large diameter Core Drill



Using the interchangeable extra length shank Core Drill



BULL POINTS and MASONRY DRILLS

No. 584 BULL POINT with PRO-TECTO-HED STOPS MUSHROOMING AND CHIPPING

Trip-Hammer forged from Special Analysis Alloy Steel. Each tool is properly tempered and tested to insure long, satisfactory service. Packed in bulk.

Size Inches	Wt., lbs., Each	Size Inches	Wt., lbs., Each
$\frac{3}{4}$ x9	$1\frac{1}{4}$	$1\frac{1}{4}$ x18	$6\frac{1}{2}$
$\frac{3}{4}$ x12	$1\frac{5}{8}$	1x24	$5\frac{3}{4}$
$\frac{7}{8}$ x12	$2\frac{1}{8}$	$1\frac{1}{8}$ x24	$7\frac{1}{2}$
1x12	$2\frac{3}{4}$	$1\frac{1}{4}$ x24	$8\frac{7}{8}$
1x15	$3\frac{1}{2}$	$1\frac{1}{2}$ x24	$12\frac{5}{8}$
$\frac{7}{8}$ x18	$3\frac{1}{4}$	$1\frac{1}{4}$ x36	$13\frac{1}{2}$
1x18	$4\frac{1}{4}$	$1\frac{1}{2}$ x36	$19\frac{1}{4}$
$1\frac{1}{8}$ x18	$5\frac{1}{4}$		



No. 584

No. 800 HAND STAR DRILL

Forged from Special Analysis Alloy Steel. Each Drill is properly designed and tempered to insure long, satisfactory service.

Size, 8" Length	Quantity, per Box	Wt., lbs., per Box	Size, 12" Length	Quantity, per Box	Wt., lbs., per Box
$\frac{1}{4}$ "	12	$1\frac{1}{8}$	$\frac{1}{4}$ "	12	$1\frac{3}{4}$
$\frac{5}{16}$ "	12	$1\frac{1}{2}$	$\frac{5}{16}$ "	12	$2\frac{1}{8}$
$\frac{3}{8}$ "	12	$2\frac{1}{4}$	$\frac{3}{8}$ "	12	$3\frac{1}{4}$
$\frac{7}{16}$ "	12	$2\frac{1}{4}$	$\frac{7}{16}$ "	12	$3\frac{3}{8}$
$\frac{1}{2}$ "	12	$3\frac{1}{8}$	$\frac{1}{2}$ "	12	$4\frac{3}{4}$
$\frac{5}{8}$ "	12	$4\frac{1}{4}$	$\frac{9}{16}$ "	12	$6\frac{3}{8}$
$\frac{3}{4}$ "	6	$2\frac{7}{8}$	$\frac{5}{8}$ "	12	$6\frac{1}{4}$
....	....	....	$\frac{11}{16}$ "	6	$4\frac{1}{8}$
....	....	....	$\frac{3}{4}$ "	6	$4\frac{3}{8}$
....	....	....	$\frac{7}{8}$ "	6	$6\frac{1}{2}$
....	....	....	1"	6	$9\frac{3}{8}$
....	....	....	$1\frac{1}{8}$ "	Bulk	$1\frac{5}{8}$ Each
....	....	....	$1\frac{1}{4}$ "	Bulk	$2\frac{1}{8}$ Each

Size 18" Length	Quantity per Box	Wt., lbs.,	Size, 24" Length	Wt., lbs., Each
$\frac{1}{2}$ "	12	$7\frac{1}{2}$ Per Box	$\frac{3}{4}$ " Bulk	$1\frac{3}{8}$
$\frac{5}{8}$ "	12	$10\frac{1}{2}$ " "	$\frac{7}{8}$ " " "	$2\frac{1}{8}$
$\frac{3}{4}$ "	6	$6\frac{3}{4}$ " "	1 " " "	$3\frac{1}{8}$
$\frac{7}{8}$ "	6	$9\frac{3}{4}$ " "	$1\frac{1}{4}$ " " "	$4\frac{1}{8}$
1"	6	$14\frac{1}{4}$ " "	$1\frac{1}{2}$ " " "	$5\frac{5}{8}$
$1\frac{1}{8}$ "	Bulk	$2\frac{3}{8}$ Each	$1\frac{3}{4}$ " " "	8
$1\frac{1}{4}$ "	"	$3\frac{1}{8}$ " "	....	....
$1\frac{3}{8}$ "	"	$3\frac{1}{8}$ " "	....	....
$1\frac{1}{2}$ "	"	$4\frac{1}{4}$ " "	....	....
$1\frac{3}{4}$ "	"	$6\frac{1}{4}$ " "	....	....



No. 800



Carbide Tipped • Industrial Quality

DUST EJECTOR ROTARY MASONRY DRILLS

- ★ NO CLOGGING OR SLOWING
- ★ NO STOPPING TO DIG OUT HOLES
- ★ WIDE, SMOOTH, ROUND FLUTES WITH PROPER PITCH BRING OUT THE DUST FASTER

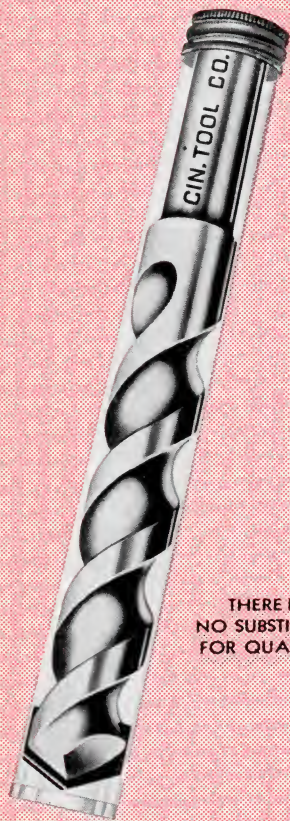


EACH DRILL PROTECTED
IN CLEAR PLASTIC VIAL

FULLY GUARANTEED AS TO WORKMANSHIP AND MATERIAL

Industrial Quality means Better Performance

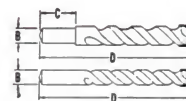
This Carbide Tipped Rotary Drill assures clean, round holes in brick, concrete, slate, marble, porcelain, stone, wallboard, plaster, etc., with minimum of effort.



THERE IS
NO SUBSTITUTE
FOR QUALITY

CARBOLOY CARBIDE TIP

The word "Carboly" is the
trade-mark of Carboly Dept.
of General Electric Co.



SPECIFICATIONS — SPIRAL FLUTED DRILLS

Stock Number	Nominal Diameter	Shank Dimensions		Overall Drill Length "D"	Minimum Actual Diameter	Package Quantities	Wt., lbs. per Pkg.
		Diameter "B"	Lengths "C"				
FDM-3	3/16"	11/16"	.....	3"	.198"	12	3/8
FDM-4	1/4"	11/16"	.....	*4" or 6"	.260"	6	3/8
FDM-5	5/16"	1/4"	1 1/2"	*4" or 6"	.328"	6	5/8
FDM-6	3/8"	1/4"	1 1/2"	*4" or 6"	.390"	6	1 1/2
FDM-7	7/16"	1/4"	1 1/2"	6"	.458"	6	1 1/8
FDM-8A	1/2"	1/4"	1 1/2"	6"	.525"	6	1 1/4
FDM-8B	1/2"	11/16"	.....	6"	.525"	6	1 5/8
FDM-9	9/16"	1/2"	1 1/2"	6"	.587"	3	1
FDM-10	5/8"	1/2"	1 1/2"	6"	.650"	3	1 1/8
FDM-11	11/16"	1/2"	1 1/2"	6"	.712"	3	1 3/8
FDM-12	3/4"	1/2"	1 1/2"	6"	.775"	3	1 1/2
FDM-14	7/8"	1/2"	1 1/2"	6"	.905"	3	2
FDM-16	1"	1/2"	1 1/2"	6"	1.030"	3	2 3/8

*4" furnished unless 6" specified. Price is the same.

DRILLS WITH EXTRA LENGTH SHANKS

FDM-4L	1/4"	11/16"	.....	12"	.260"	6	1 5/8
FDM-6L	3/8"	1/4"	.....	12"	.390"	6	2 3/4
FDM-8L	1/2"	11/16"	.....	12"	.525"	6	3 3/4
FDM-8LL	1/2"	11/16"	.....	18"	.525"	6	5 1/4
FDM-10L	5/8"	1/2"	.....	12"	.650"	3	2 1/4
FDM-10LL	5/8"	1/2"	.....	18"	.650"	3	3 3/8
FDM-12L	3/4"	1/2"	.....	12"	.775"	3	2 5/8
FDM-12LL	3/4"	1/2"	.....	18"	.775"	3	3 1/2
FDM 14L	7/8"	1/2"	.....	12"	.905"	3	2 7/8

STRAIGHT FLUTED DRILLS

FDM-18	1-1/8"	1/2"	1 5/8"	6"	1.160"	1	7/8
FDM-20	1-1/4"	1/2"	1 5/8"	10"	1.285"	1	1 3/4
FDM-24	1-1/2"	1/2"	1 5/8"	10"	1.535"	1	2 1/2

Sufficient oversize allowances are provided for proper hole size required for installation of expansion shields, anchors and toggle bolts.

How to order: Specify stock number. Order in standard package quantities wherever possible.

All specifications subject to change without notice.

Longer Life • Faster Drilling

DUST EJECTOR ROTARY MASONRY DRILLS



ATTRACTIVE DISPLAY STAND FREE WITH "G" ASSORTMENT



An attractive Selling Aid, 9 x 8 x 1 $\frac{3}{4}$ inches, constructed of Masonite backboard with wood base. Drills are in stand ready for display when unpacked.

This Compact "G" Assortment Includes . . .

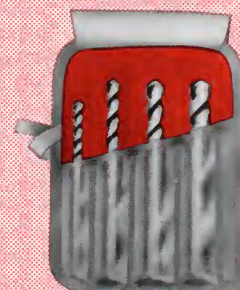
2 only FDM-3.....	3/16" Drills
4 only FDM-4.....	1/4" Drills
2 only FDM-5.....	5/16" Drills
2 only FDM-6.....	3/8" Drills
3 only FDM-8A.....	1/2" Drills
2 only FDM-10.....	5/8" Drills
1 only FDM-12.....	3/4" Drills

16 of the most popular sizes.

Packed in one carton. Shipping weight 3 $\frac{7}{8}$ lbs.

Dust Ejector
Masonry Drill Kits
(No Charge For Kits—
Drills at Regular Price)

"D" Kit



Light Duty
1/8", 1/4", 5/16", 3/8"
(For 1/4" Chuck)

"E" Kit



Heavy Duty
1/2", 5/8", 3/4"
(For 1/2" Chuck)

"F" Kit



General Purpose
1/4", 3/8", 1/2"
(For 1/4" Chuck)



Multiple Insert Carbide Tipped

CORE TYPE ROTARY MASONRY DRILLS

Larger Carbides • Full Steel Backing

DRILL WITHOUT THE USE OF WATER

"GET MORE HOLES PER DOLLAR"

SOLID HEAD TYPE



CORE TYPE



Can be used with Standard Rotary Electric Drills

Solid Head and Core Body Types

Multiple Insert Drills for drilling holes $\frac{1}{4}$ " in diameter and larger. ($\frac{3}{16}$ " size has only one insert.) Penetrate at a high rate of speed, leaving a smooth, accurately drilled hole.

Temper Hardening . . . unusual process of hardening dust removing shaft assures more drill life and continued dust ejection. Increases dust ejecting flute life over 400%.

More Carbide—Continuous Wrap-Around Dust Ejecting Spiral and Super-Bonded Inserts are features that mean lower cost drilling.

SOLID HEAD TYPE DRILLS with Non-Removable Shanks

Stock No.	DIAMETER		No. of Inserts	OVERALL LENGTHS					DRILLING RECOMMENDATIONS		
	Drill	Shank		3"	12"	18"	24"	36"	Drill Motor Rating	Speed—RPM	Pressure—Lbs.
3-A	$\frac{3}{16}$ "	—	1	3"	—	—	—	—	$\frac{1}{4}$ " TO $\frac{3}{8}$ "	900-550	100-200
4-TD	$\frac{1}{4}$ "	$\frac{1}{4}$ "	3	5"	—	—	—	—			
5-TD	$\frac{5}{16}$ "	$\frac{1}{4}$ "	3	—	—	—	—	—			
6-TD	$\frac{3}{8}$ "	$\frac{1}{4}$ "	3	—	—	—	—	—			
7-TD	$\frac{7}{16}$ "	$\frac{1}{4}$ "	3	—	—	—	—	—			
8-TD	$\frac{1}{2}$ "	$\frac{1}{2}$ "	3	8"	—	—	—	—	$\frac{1}{2}$ " TO $\frac{5}{8}$ "	750-450	100-300
9-TD	$\frac{9}{16}$ "	$\frac{1}{2}$ "	3	—	—	—	—	—			

CORE TYPE with Non-Removable Shanks

10-TD	$\frac{5}{8}$ "	$\frac{1}{2}$ "	3	8"	—	—	—	—	$\frac{1}{2}$ " TO $\frac{5}{8}$ "	750-450	100-300
11-TD	$\frac{11}{16}$ "	$\frac{1}{2}$ "	3	—	—	—	—	—			
12-TD	$\frac{3}{4}$ "	$\frac{1}{2}$ "	4	—	—	—	—	—			
13-TD	$\frac{13}{16}$ "	$\frac{1}{2}$ "	4	—	—	—	—	—			

CORE TYPE DRILLS with Removable Shanks

14-TD	$\frac{7}{8}$ "	$\frac{1}{2}$ "	4	$9\frac{1}{2}$ "	12"	18"	24"	36"	$\frac{1}{2}$ " TO $\frac{5}{8}$ "	750-450	100-300
15-TD	$\frac{15}{16}$ "	$\frac{1}{2}$ "	4	—	—	—	—	—			
16-TD	1	$\frac{1}{2}$ "	5	—	—	—	—	—	$\frac{1}{2}$ " TO $\frac{3}{4}$ "	750-350	150-350
17-TD	$1\frac{1}{16}$ "	$\frac{1}{2}$ "	5	—	—	—	—	—			
18-TD	$1\frac{1}{8}$ "	$\frac{1}{2}$ "	5	—	—	—	—	—			
19-TD	$1\frac{3}{16}$ "	$\frac{1}{2}$ "	5	—	—	—	—	—			
20-TD	$1\frac{1}{4}$ "	$\frac{1}{2}$ "	5	—	—	—	—	—			
21-TD	$1\frac{5}{16}$ "	$\frac{1}{2}$ "	5	—	—	—	—	—			
22-TD	$1\frac{3}{8}$ "	$\frac{1}{2}$ "	6	—	—	—	—	—			
23-TD	$1\frac{7}{16}$ "	$\frac{1}{2}$ "	6	—	—	—	—	—			
24-TD	$1\frac{1}{2}$ "	$\frac{1}{2}$ "	6	—	—	—	—	—			
26-TD	$1\frac{5}{8}$ "	$\frac{1}{2}$ "	8	—	—	—	—	—	$\frac{3}{4}$ " TO 1"	450-250	150-400
28-TD	$1\frac{3}{4}$ "	$\frac{1}{2}$ "	8	—	—	—	—	—			
30-TD	$1\frac{7}{8}$ "	$\frac{1}{2}$ "	8	—	—	—	—	—			
32-TD	2	$\frac{3}{4}$ "	10	—	—	—	—	—			
36-TD	$2\frac{1}{4}$ "	$\frac{3}{4}$ "	10	—	—	—	—	—			
40-TD	$2\frac{1}{2}$ "	$\frac{3}{4}$ "	10	—	—	—	—	—			
44-TD	$2\frac{3}{4}$ "	$\frac{3}{4}$ "	10	—	—	—	—	—	1" TO $1\frac{1}{4}$ "	300-150	250-1200
48-TD	3	$\frac{3}{4}$ "	12	—	—	—	—	—			
52-TD	$3\frac{1}{4}$ "	$\frac{3}{4}$ "	12	—	—	—	—	—			
56-TD	$3\frac{1}{2}$ "	$\frac{3}{4}$ "	14	—	—	—	—	—			
60-TD	$3\frac{3}{4}$ "	$\frac{3}{4}$ "	14	—	—	—	—	—	1" TO $1\frac{1}{4}$ "	300-150	250-1200
64-TD	4	1	18	—	—	—	—	—			
68-TD	$4\frac{1}{4}$ "	1	18	—	—	—	—	—			
72-TD	$4\frac{1}{2}$ "	1	18	—	—	—	—	—			
80-TD	5	1	20	—	—	—	—	—			
88-TD	$5\frac{1}{2}$ "	1	22	—	—	—	—	—			
96-TD	6	1	24	—	—	—	—	—			

The different overall drill lengths are obtained by use of different length shanks. Shanks of the same diameter are interchangeable.

Drilling recommendations are intended only as a general guide. User judgment is necessary to adjust them to maintain continuous penetration of the different materials being drilled.

Extra Length Shank Specifications

The above listed core drills of $\frac{1}{4}$ " diameter and larger have removable shanks. These shanks have a specially designed collar for taking thrust and making easy interchange.

No.	Diameter	Shank Length	Overall Length	Special Tapers Available
12-2	$\frac{1}{8}$ "	$8\frac{1}{2}$ "	12"	.....
18-2	$\frac{1}{8}$ "	$14\frac{1}{2}$ "	18"	.....
24-2	$\frac{1}{8}$ "	$20\frac{1}{2}$ "	24"	.....
36-2	$\frac{1}{8}$ "	$32\frac{1}{2}$ "	36"	.....
12-4	$\frac{3}{4}$ "	$7\frac{1}{2}$ "	12"	No. 2 Morse Tapers Available on Special Order.
18-4	$\frac{3}{4}$ "	$13\frac{1}{2}$ "	18"	
24-4	$\frac{3}{4}$ "	$19\frac{1}{2}$ "	24"	
36-4	$\frac{3}{4}$ "	$31\frac{1}{2}$ "	36"	
*12-1	1"	7"	12"	No. 3 Morse Tapers Available on Special Order.
*18-1	1"	13"	18"	
*24-1	1"	19"	24"	
*36-1	1"	31"	36"	

*Available with $\frac{3}{4}$ " thread.

Resharpening and insert repair at actual cost.

Extra length shanks for core Drills $\frac{1}{4}$ " diameter and larger

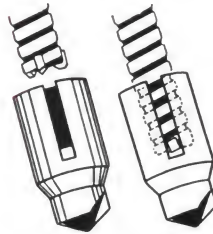


HARGRAVE IMPROVED STARTER POINTS

for Multiple-Insert Rotary Drills

For quick, easy starting of ALL HARGRAVE Solid-Head Type and Core Type Drills. Starter Points can be used over and over again and can be resharpened when necessary. Greater drilling accuracy and durability of HARGRAVE Multiple insert

drills assured plus the hole-starting ease and speed of single-cutter drills. As soon as the starting impression has been made in the material being drilled, the STARTER POINTS are easily removed and drilling proceeds with only the multiple-insert drill.



SOLID-HEAD TYPE

Starter Points fit OVER end of Solid-Head type drills and are driven by outside projection of drills' carbide teeth which fit into slots in the Starter Point body.

(Remove Starter Point when approximately $\frac{3}{16}$ " hole has been drilled.)

Pointed carbide insert accurately positions hole at selected spot.

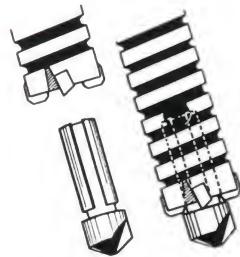
FOR DRILL
DIAMETER

STOCK
NO.

$\frac{1}{4}$ "	4-SP
$\frac{5}{16}$ "	5-SP
$\frac{3}{8}$ "	6-SP
$\frac{7}{16}$ "	7-SP
$\frac{1}{2}$ "	8-SP
$\frac{5}{8}$ "	10-SP

CORE-HEAD TYPES

(For Smaller Sizes)



For core-type drills remove Starter Point as soon as carbide teeth of core-drill have slightly scored masonry surface.

Starter Points fit INSIDE of core-type drills and are driven by inside projection of drill's carbide teeth which fit into slots in the Starter Point body.

Pointed carbide insert accurately positions hole at selected spot.

FOR DRILL
DIAMETER

STOCK
NO.

$\frac{3}{4}$ "	12-SP
$\frac{7}{8}$ "	14-SP
1"	16-SP
$1\frac{1}{8}$ "	18-SP
$1\frac{1}{4}$ "	20-SP

(For Larger Sizes)



Double Value . . . There are two pointed carbide cutters on each arm-type starter point, one each on the top and bottom sides. When one cutter wears down, Starter Point may be reversed to utilize the second cutter. The arms of each size of starter points fit into the slots at the end of the drill, and are long enough to accommodate many drill diameters.

Pointed carbide cutter easily and accurately positions hole at selected spot.

FOR DRILL
DIAMETER

STOCK
NO.

$1\frac{3}{8}$ ", $1\frac{1}{2}$ ", $1\frac{5}{8}$ "	22-SP
$1\frac{3}{4}$ ", $1\frac{7}{8}$ ", 2", $2\frac{1}{4}$ "	28-SP
$2\frac{1}{2}$ ", $2\frac{3}{4}$ ", 3", $3\frac{1}{4}$ ", $3\frac{1}{2}$ ", $3\frac{3}{4}$ "	40-SP
4", $4\frac{1}{4}$ ", $4\frac{1}{2}$ ", 5", $5\frac{1}{2}$ ", 6"	64-SP

Note: In order to use the Arm-type Starter points, drills must have the necessary slots. If your jobber does not have this type drill in stock, ask him to order from the factory.

No. 99 Masonry Core Drill Display Stand FREE

With one $\frac{7}{8}$ " Core Drill at Regular Price

Easy to Assemble • Minimum of Space

12" Long, 7" High • 4" Maximum Depth
Shipping Wt. $1\frac{1}{4}$ lbs.

THIS ATTRACTIVE DISPLAY

Arouses Interest • Creates Inquiries • Results In Sales





- CUT FASTER
- WEAR LONGER
- DRILL DEEPER
- SHARPEN EASIER

V-FLAT MASONRY DRILLS

No. 100 V-FLAT STAR DRILLS

FOR ELECTRIC OR PNEUMATIC HAMMERS

SAVE 50% ON COST OF DRILLING HOLES

In actual working tests Hargrave "V" Flat Star Drills have more than doubled the drilling speed of the conventional 4-point drill.

Hargrave "V" Flat Star Drills cut faster and show less wear because the construction of the point distributes the cutting action more uniformly over the surface being drilled than any other type of Power Hammer point.

Trip-Hammer Forged from special analysis steel and properly tempered, each "V" Flat Star Drill is individually tested for hardness and toughness before going into stock.

"V" Flat Star Drills are furnished in sizes listed below to fit Hargrave Chucks, also chucks for Black & Decker, Syntrol and Millers Falls Electric Hammers.

For other makes of hammers it is necessary to use these drills with the Hargrave Chucks—shown on following page.

IMPORTANT—in ordering, specify **DRILL SIZE** and **TAPER NUMBER**

H A R G R A V E									Hargrave No. 100 Drills, with Taper Number indicated, can be used with other manufacturers' chucks as shown below.	
Sizes, Lengths and Taper Numbers										
Drill Size	Available Length			Approx. Wt., Lbs.				Taper No.		
	Pkg'd 6 per Box		Packed Bulk	per Box			Each			
	5"	8"	12"	18"	5"	8"	12"	18"		
1/4"	"	"	"	—	½	⅝	¾	—	5	Corresponds to B & D Taper "A".
									10	Will fit Syntron or Millers Falls Chucks.
5/16"	"	"	"	—	½	¾	1⅝	—	5	Corresponds to B & D Taper "A".
									10	Will fit Syntron or Millers Falls Chucks.
3/8"	"	"	"	—	⅝	⅞	1¼	—	5	Corresponds to B & D Taper "A".
									10	Will fit Syntron or Millers Falls Chucks.
7/16"	"	"	"	—	¾	1⅞	1⅞	—	5	Corresponds to B & D Taper "A".
									10	Will fit Syntron or Millers Falls Chucks.
1/2"	"	"	"	"	¾	1⅞	2⅞	⅝	5	Corresponds to B & D Taper "A".
									10	Will fit Syntron or Millers Falls Chucks.
9/16"	—	"	"	"	—	1½	2¼	⅝	5	Corresponds to B & D Taper "A".
									10	Will fit Syntron or Millers Falls Chucks.
5/8"	—	"	"	"	—	1¾	2⅞	¾	5	Corresponds to B & D Taper "A".
									10	Will fit Syntron or Millers Falls Chucks.
11/16"	—	"	"	"	—	2⅞	3⅝	⅞	5	Corresponds to B & D Taper "A".
									6	Corresponds to B & D Taper "B".
									10	Will fit Syntron or Millers Falls Chucks.
									11	
3/4"	—	"	"	"	—	2½	3¾	1	5	Corresponds to B & D Taper "A".
									6	Corresponds to B & D Taper "B".
									10	Will fit Syntron or Millers Falls Chucks.
									11	
7/8"	—	"	"	"	—	2⅝	4¼	1	6	Corresponds to B & D Taper "B".
									11	Will fit Syntron or Millers Falls Chucks.
1"	—	"	"	"	—	3⅝	5⅝	1½	6	Corresponds to B & D Taper "B".
									11	Will fit Syntron or Millers Falls Chucks.
1-1/8"	—	—	"	"	—	—	7¼	2	6	Corresponds to B & D Taper "B".
									11	Will fit Syntron or Millers Falls Chucks.



No. 120 CHUCK ADAPTER

For ELECTRIC or PNEUMATIC HAMMERS

The use of Hargrave Adapter Chucks eliminates the necessity of carrying duplicate stocks of drills for various hammers.

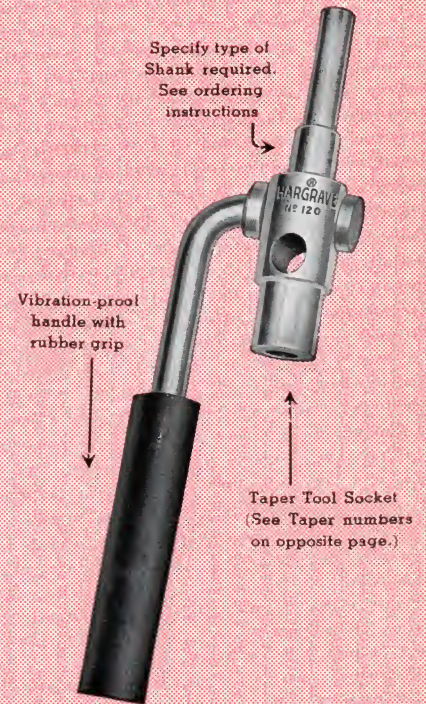
This CHUCK or Adapter can be furnished with a shank to fit any standard make of Electric or Pneumatic Hammer, and a taper tool socket to take any one of the tapers furnished on HARGRAVE "V" Flat Drills.

Handle with rubber grip is permanently attached.

Made of alloy steel, heat-treated. Light but strong; no excess weight to absorb hammer blow.

Swivel Steel Handle with comfortable rubber grip is permanently journaled in chuck and will not loosen. It makes Hargrave Chucks less tiring for the operator.

Packaged, one in a box. Weight, 1¾ lbs.



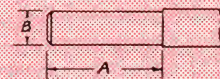
Important Instructions for Ordering:

1. Specify which type of Chuck Shank is required by checking drawings shown at the right.
2. When ordering Straight Round or Straight Hexagon Shanks: Give dimensions "A" and "B".
3. When ordering Differential Round or Differential Hexagon Shanks: Give dimensions "A", "B", "C", "D" and "E".

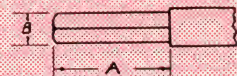
(If above dimensions are not readily obtainable, give make and model or type of electric or pneumatic hammer).

4. Give the Hargrave **Taper Number** which you wish the Chuck socket to take. (See listing of Hargrave Taper Numbers on opposite page.)

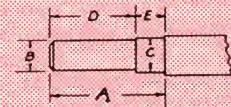
STRAIGHT ROUND



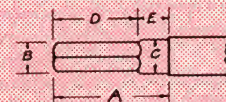
STRAIGHT HEXAGON



DIFFERENTIAL ROUND

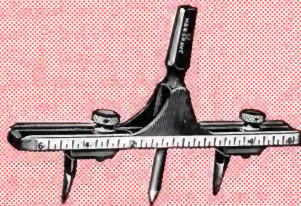


DIFFERENTIAL HEXAGON-ROUND





Washer and Metal Cutters



PACKAGED—
One to a box.
WEIGHT—1 Lb. Each.

No. 407 Washer Cutter (Brace)

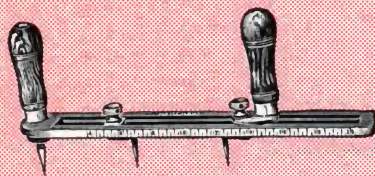
Maximum capacity 6", minimum capacity $\frac{7}{8}$ ".

Used for cutting gaskets out of leather, paper, rubber, sheet lead or thin wood, cutting both inner and outer circle at the same time; adaptable to any ordinary brace. The body of tool is malleable iron; pin is of steel; blades are of tool steel, properly ground and tempered. Polished and japanned. The adjustment is made by knurled thumbscrews.

No. 407—6-inch, with gauge.

No. 407-A—Knives only.

No. 410—Screws only.



PACKAGED—One to a box.
WEIGHT—1 Lb. Each

No. 411 Washer Cutter (Hand)

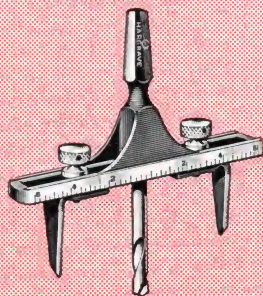
Maximum capacity 20", minimum capacity 4".

This tool is adaptable to cutting gaskets from 4 to 20 inches in diameter. The knives are of tool steel, well tempered, and are adjusted by knurled thumbscrews. The center pin is also of steel. The cutter is japanned and polished.

No. 411—20-inch, with gauge.

No. 411-A—Knives only.

No. 410—Screws only.



PACKAGED—
One to a box.
WEIGHT—1 Lb. Each

No. 1406 Metal Cutter (Brace)

$1\frac{1}{4}$ " to 6" Capacity

Cuts circular holes in sheet metal, wood, fibre, etc. Useful for electricians, auto mechanics, sheet metal workers, etc. Will cut circles from $1\frac{1}{4}$ to 6 inches, when used in brace.

The knives are forged from one solid piece of tool steel, carefully tempered. The shank is made of forged tool steel and the body of the tool is heavy malleable.

Furnished with round or taper shanks for use in machine, if desired. Maximum capacity for machine use 4-inch diameter. Care should be taken that the safe cutting speed for carbon steel (about 20 feet per minute) is not exceeded, unless high-speed steel knives are used.

No. 1406—Circle Metal Cutter (with Bit Stock Shank and Carbon Steel Knives).

No. 1406-HSR—Circle Metal Cutter (with $\frac{1}{2}$ -inch Round Shank and High-Speed Steel Knives). Maximum capacity, 4 inches.

No. 1406-HST—Circle Metal Cutter (with No. 1 Morse Taper Shank and High-Speed Steel Knives). Maximum capacity, 4 inches.

No. 1407—Knives only, Carbon Steel.

No. 1408—Knives only, High-Speed Steel.

No. 1409—Center Drill only, Carbon Steel.

No. 1410—Adjusting Screws only.

When ordering, specify **STOCK NUMBER**



No. 414 Handy Gasket Cutter

Hand Operated

Cuts Round Gaskets $\frac{1}{4}$ to 6 inches—

Odd shapes and straight pieces any size

Phenolic Body—Steel Blades—Direct Inch and Metric Scales

Combines the features of a circle cutter, straightedge, compass, scorer and knife. Sizes accurately set. Gaskets quickly cut, Holes speedily made, Lines easily followed and Strips smoothly cut. Disks, Gaskets, Patterns, Washers, Shims, etc., easily and quickly cut from every pliable sheet material.

Model No. 414 includes the Handy Gasket Cutter with K-2 Kit of 6 parts in small vial (2 different cutting blades, 1 center ferrule, 3 different Pivot Pins).

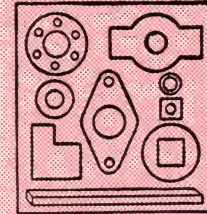
Model No. 414-A-14 includes the Handy Gasket Cutter, K-2 Kit and a C-10 Cutting Board, in box.

No. C-10 non-deteriorating composition Cutting Board, (6" x 6" x $\frac{1}{2}$ "), with No. C-11 Plastic Cutting Pad and F-11 Ferrule available as one complete unit.

No. C-15 non-deteriorating composition Cutting Board, (18" x 18" x $\frac{1}{2}$ ") with No. C-19 Plastic Cutting Pad, and two F-11 Center Ferrules available as one complete unit.

Six different Cutting Blades, three different Pivot Pins, as well as F-11 Center Ferrule are available in kits of 6 each, or in combination kits. All kits packed in a small vial for safe keeping. The uses and advantages of each are fully explained in the complete Operating Instructions and Parts List included with each Cutter. All parts are readily available.

Attractively packed in a strong, blue-hammertone metal hinged box ($2\frac{1}{2}$ x $6\frac{1}{4}$ x $1\frac{1}{2}$ ") for convenient carrying or storage.



PACKAGED—One to a box.
WEIGHT—1 lb. Each.

No. 415 & No. 416 Extension Gasket Cutters

(ALL PARTS ARE INTERCHANGEABLE)

Hand Operated

Cuts Precision Round Gaskets Any Size

**No. 415 Aluminum Body . No. 416 Phenolic Body—
Steel Blades—Direct Inch and Metric Scales—**

Sizes accurately set. Cut Precision ROUND Diaphragms, Disks, Gaskets, Patterns, Washers and Shims 1" to 13" diameter from every pliable sheet material (or $\frac{1}{4}$ " to $13\frac{3}{4}$ " when a K-47 Pivot Post Assembly is used, permitting gaskets for 10" pipe, or full face gaskets for 8" pipe).

Model Nos. 415 and 416 include the Extension Gasket Cutter, K-7 Kit (1 blade, 1 Ferrule, 4 different Pivot Pins), H-17 Hexagon Socket Key Wrench and H-27 Pin Handle for seating pin in material. **No. 416**, in addition, includes 1 each L-37 Bolt Hole Locator and D-47 Dovetail Designer.

Model Nos. 415-A-1 and 416-B-13 include items for a Nos. 415 or 416, plus C-15 Cutting Board, in box, or C-16 Cutting Board, in box, respectively.

Models Nos. 415-A-2 thru A-5 and 416-B-13 thru B-61 include all parts for a Nos. 415-A-1 or 416-B-13, plus one additional E-12 Extension Arm, respectively.

Each Extension Arm (**No. E-12**) increases the cutting capacity another 12-inches; quickly and easily attached and removed. As many Extension Arms as desired may be used at one time. E-12 Arm(s) available separately. No. C-15 Unit contains non-deteriorating composition Cutting Board (18 x 18 x $\frac{1}{2}$ ") with No. C-19 Plastic Cutting Pad and two F-11 Center Ferrules. C-16 Unit contains non-deteriorating composition Cutting Board (18 x 18 x $\frac{1}{2}$ ") with a C-18 Fibre Pad and two F-11 Ferrules.

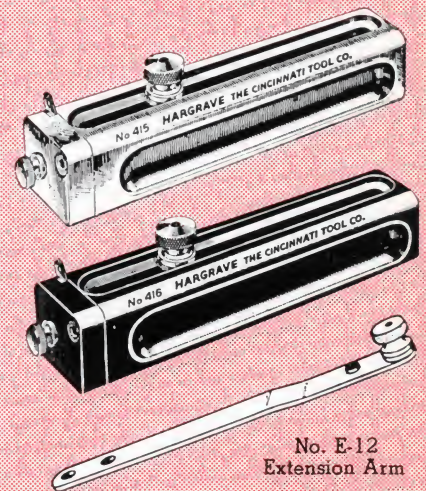
C-18 Unit contains Fibre Cutting Pad (18 x 18 x $\frac{7}{8}$ ").
C-19 Unit contains Plastic Cutting Pad (18 x 18 x $\frac{1}{8}$ ").

Blades, Pivot Pins, and Center Ferrule are available in kits of 6 each, or in combination kits. All Kits packed in a small vial for safe keeping. All parts are readily available.

Two different Cutting Blades, as well as four different Pivot Pins, are available with either Cutter, the uses and advantages of which are fully explained in the complete Operating Instructions and Parts List included with each Cutter.

Attractively packed in a strong, blue-hammertone metal hinged box ($3\frac{1}{2}$ x $8\frac{3}{4}$ x $2\frac{5}{8}$ ") for convenient carrying or storage.

Note: All parts for No. 415 and No. 416 are interchangeable.



PACKAGED—One to a box.
APPROX. WEIGHT—3 lbs. Each



No. D-47 Dovetail Designer for any width flange.



No. L-37 Bolt Hole Locator for any size bolt circle.

Both Nos. D-47 and L-37 included with No. 416. (Instruction card enclosed with each.) Slight additional charge when specified with No. 415.



FILE CLEANERS

The teeth of all Hargrave File Cleaners are tempered steel wire that will not turn over when they come in contact with file. All three patterns will give long, satisfying service with reasonable care.



No. 363

Flat handle type 10" over all. Handle has rounded edges to assure comfortable grip. Carding is securely fastened by glue and tacks.

No. 363—PACKED—12 per box. WEIGHT, per Box—2 $\frac{3}{4}$ lbs.



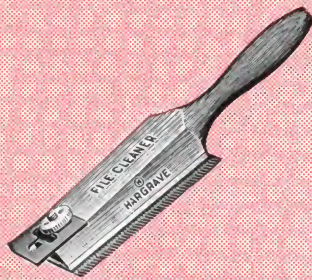
Nos. 364, 3641

Substantially constructed of hardwood. Ideal for production cleaning. Rounded wood handle provides best possible grip. When Scorer is required specify Stock No. 3641.

No. 364 —(As illustrated).

No. 3641—(With scorer).

PACKED—12 per Box. WEIGHT, per Box—3 lbs.



No. 366 (with chip plow)

This is a very efficient way to clean a file of soft metal chips—lead, copper, aluminum and soft steel. More efficient and at least ten times faster than a scorer.

It does a better job quicker

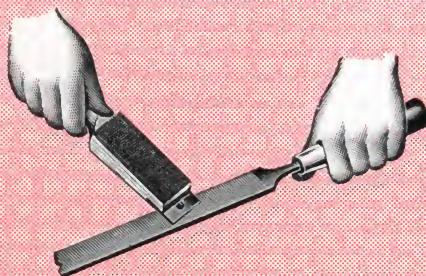
The Chip Plow is fastened to the body of our regular high-grade File Cleaner. The four edges may be used at will, or the plate may be set in the disengaged position and only the regular file card used.

When a file of different tooth spacing is to be cleaned, another edge of the Plow is used. Plows are long lasting and can be replaced at low cost. In the case of easily removed residue, the file card with its tempered steel wire teeth will prove a very efficient cleaner.

No. 366—PACKED—6 per Box. WEIGHT, per Box—1 $\frac{7}{8}$ lbs.

Extra Plates—No. 366-P.

Extra Thumb Nut—No. 366-N.



BRACE WRENCHES

FORGED STEEL HEAT-TREATED

Each size is accurately drifted to United States standard nut sizes. A shoulder prevents the nut working far up into the wrench; the open shank prevents clogging with dirt and allows the wrench to be used in places where a brace will not go.

*Size opening given below for both Square and Hexagon Wrenches is measurement from flat to flat and is stamped on each wrench.

SQUARE OPENING WRENCH

Order by number to insure proper size being shipped

Number	*Size Opening, Inches	Machine Bolt (Nut)	Machine Bolt and Lag Screw (Head)	Stove Bolt (Nut)	Machine Screw (Nut)	Wt., lbs., per Box
151	5/16 will fit	1/8	3/16	1/8	6	3/4
152	3/8 will fit	3/16	1/4	5/16	8 & 10	1/2
153	7/16 will fit			7/16	12	5/8
154	1/2 will fit	1/4	5/16	1/4	1/4	3/4
155	19/32 will fit	5/16	3/8	5/16	5/16	1
156	5/8 will fit			3/8	3/8	1
1560	11/16 will fit	3/8	7/16			1 1/2
157	25/32 will fit	7/16	1/2			1 7/8
158	7/8 will fit	1/2	9/16			2 3/8
159	1 will fit	9/16	5/8			3

Packaged 6 per Box.



Square Opening
Solid, Forged Steel.
Heat Treated

HEXAGON OPENING WRENCHES

Order by number to insure proper size being shipped

Number	*Size Opening, Inches	Machine Bolt (Nut)	Machine Bolt (Head)	Cap Screw (Head and Nut)	Machine Screw (Nut)	Wt., lbs., per Box
165	5/16 will fit	1/8	3/16		6	3/8
166	3/8 will fit	3/16	1/4		8 & 10	3/8
167	7/16 will fit			1/4	12	1/2
168	1/2 will fit	1/4	5/16	5/16	1/4	1/2
169	19/32 will fit	5/16	3/8	3/8	5/16	5/8
170	5/8 will fit			7/16	3/8	5/8
171	11/16 will fit	3/8	7/16			1
172	25/32 will fit	7/16	1/2	1/2		1
173	7/8 will fit	1/2	9/16	9/16	5/8	1 3/8
174	1 will fit	9/16	5/8			2 1/4

Packaged 6 per Box.



Hexagon Opening
Solid, Forged Steel.
Heat Treated



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HARGRAVE  **Tested Tools**

MANUFACTURED BY
THE CINCINNATI TOOL CO. • Cincinnati 12, Ohio

ESTABLISHED 1879 • INCORPORATED 1884

NET AND LIST PRICES**EFFECTIVE JULY 18, 1960****THE CINCINNATI TOOL CO. — Cincinnati 12, Ohio**

All previous quotations are hereby withdrawn. Completion of orders contingent upon strikes and other conditions beyond our control. Orders accepted only at price in effect at date of shipment. Cancellation of orders accepted only at our terms.

RESALE PRICES — Are suggested Resale Prices.

All prices are subject to change without notice.

TERMS: 30 days net, 2% discount for payment 10th of month following date of shipment.

All goods sold F.O.B. factory.

FREIGHT ALLOWANCE — Actual freight will be prepaid and allowed, **subject to our routing**, throughout Continental United States and Canada, except Alaska, on single orders to one destination, amounting to 200 lbs. net or \$135.00 net, whichever is to the customer's advantage.

Shipment of entire orders will be made as soon as possible. Should prompt partial shipment be desired, we will endeavor to comply with your instructions, in which case we assume no responsibility for additional transportation cost.

BROKEN PACKAGES — An extra charge of 10% will be made for less than Standard Package (except for Carbide Tipped Drills). Package quantities are shown below. Items packed in bulk are indicated by "B".

DIRECT SHIPMENT CHARGE — We reserve the right to protect available Distributor stocks by charging 10% additional for direct shipments.

MINIMUM CHARGE — Not less than \$4.00 will be charged for any one order, except repair parts.

Goods should not be returned without permission.

CLAMPS**(Stock Numbers Listed in Numerical Sequence)**

STOCK No.	SIZE OPENING	STD. PKG.	EACH NET	EACH LIST	STOCK No.	SIZE OPENING	STD. PKG.	EACH NET	EACH LIST	STOCK No.	SIZE OPENING	STD. PKG.	EACH NET	EACH LIST
ASSORTMENTS					(No. 40 Heavy Duty Con.) ★					DEEP "C"—FORGED STEEL				
5 (Spring Clamps)		1	10.88	16.32	40 8½"	B	29.73	44.60		48 6 x 8"	B	10.52	15.78	
60 (No. 300 Clamps)		1	19.72	29.58	40 10½"	B	40.32	60.48		48 8 x 12"	B	12.20	18.30	
530 (No. 540 Clamps)		1	29.28	43.92	40 12½"	B	53.48	80.22		48 8 x 16"	B	15.92	23.88	
1220 (No. 122 D.P. Clamps)		1	10.40	15.60	WELDERS' REGULAR DUTY—FORGED STEEL "C"					48 12 x 16"	B	18.08	27.12	
SPRING CLAMPS					41 2"	1	2.72	4.08		SUPER-JUNIOR "C"—FORGED STEEL				
1 1"	12	.25	.38		41 3"	1	3.12	4.68		50 1"	12	.36	.54	
2 2"	12	.40	.60		41 4"	1	3.44	5.16		51 1"	12	.37	.56	
3 3"	6	.76	1.14		41 6"	1	4.69	7.04		52 1¼"	12	.39	.58	
Lighter Spring Pressures available; quotation on request.					MEDIUM DUTY—FORGED STEEL "C" ★					53 1½"	12	.44	.66	
PRESS SCREWS					42 4"	B	6.60	9.90		54 2"	6	.56	.84	
36-T	B	2.11	3.16		42 6"	B	8.08	12.12		55 3"	6	.68	1.02	
36-W	B	2.11	3.16		42 8"	B	9.68	14.52		56 2½"	6	.77	1.16	
HEAVY DUTY—DROP FORGED "C" ★					42 10"	B	11.68	17.52		DRILL PRESS CLAMPS				
40 ¾"	B	1.83	2.74		42 12"	B	13.68	20.52		122 -	1	2.60	3.95	
40 1¼"	B	2.71	4.06		42 15"	B	17.72	26.58		CIN-CRAFT "C"—PRESSED STEEL				
40 1½"	B	4.52	6.78		42 18"	B	21.84	32.76		300 1"	12	.21	.32	
40 2¼"	B	6.28	9.42		WELDERS' HEAVY DUTY—FORGED STEEL "C"					300 2"	12	.28	.42	
40 3¼"	B	9.00	13.50		43 4"	1	7.00	10.50		300 2½"	6	.52	.78	
40 4½"	B	11.72	17.58		43 6"	1	8.40	12.60		300 3"	6	.43	.64	
40 5½"	B	14.44	21.66		43 8"	1	10.24	15.36		DEEP GENERAL DUTY—DROP FORGED "C" ★				
40 6½"	B	18.01	27.02		43 10"	1	12.20	18.30		400 2"	B	2.60	3.90	
40 8½"	B	25.21	37.82		43 12"	1	13.96	20.94		400 3"	B	3.16	4.74	
40 10½"	B	34.19	51.28		REGULAR DUTY—FORGED STEEL "C"					400 4"	B	3.81	5.72	
40 12½"	B	44.99	67.48		No. 44P or 44W					400 6"	B	5.25	7.88	
Available as No. 40-S Clamps with Spatter Resisting Plated Finish on all parts. Quotation on request.					44 1"	6	1.47	2.20		400 8"	B	6.95	10.42	
HEAVY DUTY—FULL LENGTH SCREW ★					44 1½"	6	1.56	2.34		400 10"	B	8.76	13.14	
40 ¾"	B	1.83	2.74		44 2"	6	1.84	2.76		400 12"	B	11.40	17.10	
40 1¼"	B	2.71	4.06		44 3"	6	2.12	3.18		WITH SPATTER RESISTANT FINISH ON ALL PARTS: ★				
40 1½"	B	4.52	6.78		44 4"	6	2.44	3.66		400-S 2"	B	3.17	4.76	
40 2¼"	B	7.64	11.46		44 6"	6	2.92	4.38		400-S 3"	B	3.93	5.90	
40 3¼"	B	10.88	16.32		44 8"	B	4.36	6.54		400-S 4"	B	5.11	7.66	
40 4½"	B	14.00	21.00		44 10"	B	6.32	9.48		400-S 6"	B	6.57	9.86	
40 5½"	B	17.24	25.86		44 12"	B	6.92	10.38		400-S 8"	B	8.35	12.52	
40 6½"	B	21.24	31.86		WELDERS' DEEP REACH—FORGED STEEL "C"					400-S 10"	B	10.48	15.72	
(No. 40 Heavy Duty Con. Next Col.)					45 2 x 2"	1	3.28	4.92		400-S 12"	B	13.08	19.62	
					45 3 x 3"	1	4.55	6.82						
					45 4 x 4"	1	6.76	10.14						

★ QUANTITY SCHEDULE FORGED STEEL CLAMPS
NOS. 40, 42, and 400 only

PAGE 1

\$500.00 to 999.99 - LESS 10%
\$1,000.00 and UP - LESS 15%

STOCK No.	SIZE OPENING	STD. PKG.	EACH NET	EACH LIST	STOCK No.	SIZE OPENING	STD. PKG.	EACH NET	EACH LIST	STOCK No.	SIZE OPENING	STD. PKG.	EACH NET	EACH LIST	
MEDIUM DUTY BAR CLAMP					QUICK CLAMPS					DEEP "C"—MALLEABLE					
440	2'	B	4.24	6.36	503	6"	B	5.41	8.12	573	3½" x 4½"	B	2.12	3.18	
440	2½'	B	4.40	6.60	503	8"	B	5.53	8.30	573	4½" x 4½"	B	2.36	3.54	
440	3'	B	4.60	6.90	503	12"	B	5.68	8.52	573	6½" x 4½"	B	2.88	4.32	
440	4'	B	5.04	7.56	503	18"	B	5.84	8.76	RIGID DEEP MALLEABLE					
440	5'	B	5.44	8.16	503	24"	B	6.23	9.34	574	6 x 9"	B	7.88	11.82	
440	6"	B	5.88	8.82	QUICK CLAMPS					574	8 x 9"	B	8.28	12.42	
HEAVY DUTY BAR CLAMP					506	6"	B	3.08	4.62	574	12 x 9"	B	8.80	13.20	
450	3'	B	9.52	14.28	506	8"	B	3.16	4.74	574	16 x 9"	B	9.28	13.92	
450	4'	B	9.84	14.76	506	12"	B	3.24	4.86	CLAMP FIXTURE—PIPE					
450	5'	B	10.40	15.60	506	18"	B	3.52	5.28	(Pipe Not Included)					
450	6"	B	11.04	16.56	506	24"	B	3.72	5.58	600	¾" Pipe	1	2.40	3.60	
450	7"	B	11.76	17.64	506	30"	B	3.80	5.70	620	½" Pipe	1	2.08	3.12	
450	8"	B	12.56	18.84	QUICK CLAMPS					621	½" Pipe	1	1.87	2.80	
450	10'	B	14.80	22.20	508	6"	B	5.41	8.12	CLAMP FIXTURE—					
LIGHT DUTY BAR CLAMP					508	8"	B	5.53	8.30	FOR WOOD BAR 1½" x 2¼"					
458	1'	B	3.52	5.28	508	12"	B	5.68	8.52	(Wood Bar Not Included)					
458	1½'	B	3.60	5.40	508	18"	B	5.84	8.76	615	(Wheel)	1	2.08	3.12	
458	2'	B	3.72	5.58	508	24"	B	6.23	9.34	615-18½	(Crank)	1	2.08	3.12	
458	3'	B	4.00	6.00	508	36"	B	6.48	9.72	BODY CLAMPS—"C"					
QUICK CLAMPS					QUICK CLAMPS					603	3"	B	1.68	2.52	
496	4"	B	1.92	2.88	510	6"	B	8.64	12.96	603	4"	B	1.84	2.76	
496	6"	B	1.96	2.94	510	8"	B	9.12	13.68	603	5"	B	2.28	3.42	
496	8"	B	2.04	3.06	510	12"	B	9.68	14.52	603	6"	B	2.60	3.90	
496	12"	B	2.16	3.24	510	18"	B	10.20	15.30	603	8"	B	3.96	5.94	
496	18"	B	2.25	3.38	510	24"	B	10.64	15.96	603	10"	B	5.72	8.58	
496	24"	B	2.44	3.66	QUICK CLAMPS					603	12"	B	6.92	10.38	
QUICK CLAMPS					512	6"	B	3.80	5.70	"I" BAR CLAMPS					
498	4"	B	2.84	4.26	512	8"	B	4.00	6.00	640	2'	B	4.24	6.36	
498	6"	B	2.88	4.32	512	12"	B	4.16	6.24	640	2½'	B	4.40	6.60	
498	8"	B	2.92	4.38	512	18"	B	4.32	6.48	640	3'	B	4.60	6.90	
498	12"	B	3.00	4.50	512	24"	B	4.48	6.72	640	4'	B	5.04	7.56	
498	18"	B	3.12	4.68	QUICK CLAMPS					640	5'	B	5.44	8.16	
498	24"	B	3.24	4.86	514	6"	B	5.00	7.50	640	6'	B	5.88	8.82	
498	30"	B	3.32	4.98	514	8"	B	5.08	7.62	640	7'	B	6.48	9.72	
QUICK CLAMPS					514	12"	B	5.20	7.80	HAND SCREWS					
499	4"	B	3.56	5.34	514	18"	B	5.41	8.12	Length of Jaw		Size Opening			
499	6"	B	3.61	5.42	514	24"	B	5.76	8.64	704	4"	2"	6	2.20	3.30
499	8"	B	3.67	5.50	514	36"	B	6.20	9.30	706	6"	3"	6	2.52	3.78
499	12"	B	3.75	5.62	514	48"	B	6.48	9.72	708	8"	4½"	6	3.00	4.50
499	18"	B	3.87	5.80	QUICK CLAMPS					710	10"	6"	6	3.44	5.16
499	24"	B	3.96	5.94	540	6"	B	1.08	1.62	712	12"	8½"	6	3.96	5.94
499	30"	B	4.05	6.08	540	8"	B	1.16	1.74	714	14"	10"	4	5.40	8.10
QUICK CLAMPS					540	12"	B	1.52	2.28	716	16"	12"	4	7.20	10.80
500	6"	B	3.80	5.70	540	18"	B	2.20	3.20	718	18"	14"	4	8.60	12.90
500	8"	B	4.00	6.00	STANDARD CARRIAGE "C"					EXTRA HEAVY DUTY BAR CLAMPS					
500	12"	B	4.16	6.24	No. 540P or 540W					750	3'	B	30.80	46.20	
500	18"	B	4.32	6.48	540	2½"	6	1.08	1.62	750	4'	B	32.56	48.84	
500	24"	B	4.48	6.72	540	3"	6	1.16	1.74	750	5'	B	34.32	51.48	
500	30"	B	4.68	7.02	540	4"	6	1.52	2.28	750	6'	B	36.08	54.12	
500	36"	B	4.88	7.32	540	5"	6	1.92	2.88	750	7'	B	39.60	59.40	
QUICK CLAMPS					540	6"	6	2.20	3.20	750	8"	B	41.40	62.10	
501	6"	B	3.80	5.70	540	8"	B	3.20	4.80	750	10'	B	45.76	68.64	
501	8"	B	4.00	6.00	540	10"	B	4.44	6.66	750	12'	B	49.28	73.92	
501	12"	B	4.16	6.24	540	12"	B	5.72	8.58	MITER-FRAME CLAMPS					
501	18"	B	4.32	6.48	540	14"	B	7.48	11.22	780	2" thru 14"	1	3.68	5.52	
501	24"	B	4.48	6.72	JUNIOR CLAMPS—SMALL "C"					(For larger capacity use No. 780-E Extension Screws, 4 per set, each set increases capacity 12".)					
QUICK CLAMPS					551	4"	6	1.31	1.96	780-E	1 Set	1.60	2.40		
502	6"	B	5.28	7.92	552	6"	6	1.88	2.82						
502	8"	B	5.41	8.12	555	1½"	6	.80	1.20						
502	12"	B	5.53	8.30	556	2½"	6	1.28	1.92						
502	18"	B	5.68	8.52	566	1¼"	B	.33	.50						
502	24"	B	5.84	8.76	568	2½"	B	.64	.96						
502	36"	B	6.20	9.30											
502	48"	B	6.48	9.72											

CHISELS AND PUNCHES

(Stock Numbers Listed in Numerical Sequence by Category)

STOCK No.	SIZE	STD. PKG.	EACH NET	EACH LIST	STOCK No.	SIZE	STD. PKG.	EACH NET	EACH LIST	STOCK No.	SIZE	STD. PKG.	EACH NET	EACH LIST
CHISELS					CHISELS—(Continued)					PUNCHES (Continued)				
CHISEL-PUNCH ASSORTMENT					WOOD CHISELS					CENTER PUNCHES				
1950		1	19.44	29.16	577	1/2" x 8 1/2"	6	1.56	2.34	284	1/4" x 3 1/2"	12	.52	.78
Handy Kits					577	3/4" x 10 1/2"	6	1.80	2.70	284	5/16" x 3 3/4"	12	.52	.78
No. 140 Ten-Piece Chisel and Punch Kit		6	6.19	9.28	577	1" x 10 1/2"	6	1.92	2.88	284	3/8" x 4 1/2"	12	.52	.78
No. 150 Four-Piece Chisel Kit		6	2.35	3.52	577	1 1/4" x 10 1/2"	6	2.08	3.12	284	1/2" x 5 1/2"	6	.65	.98
No. 160 Four-Piece Chisel and Punch Kit		6	2.33	3.50	RIVET BUSTERS					284	5/8" x 6 1/2"	6	.80	1.20
COLD CHISEL					580	1/2" x 3/4" x 9"	B	1.28	1.92	PINCH & LINING BAR				
200	1/4" x 5"	12	.48	.72	580	5/8" x 1/8" x 12"	B	1.76	2.64	330	1/2" x 15 1/2"	3	1.56	2.34
200	5/16" x 5"	12	.52	.78	580	3/4" x 1" x 18"	B	3.04	4.56	LINING-UP PUNCHES				
200	3/8" x 5"	12	.56	.84	WRECKING CHISELS					620	1/8" x 9"	6	.80	1.20
200	1/2" x 6"	6	.61	.92	STRAIGHT					620	5/16" x 10"	6	.88	1.32
200	5/8" x 6 1/2"	6	.69	1.04	582	1 1/2" x 18"	3	2.85	4.28	620	1/8" x 12"	6	1.00	1.50
200	3/4" x 7 1/2"	6	.84	1.26	BENT					620	1/4" x 12"	6	1.12	1.68
200	7/8" x 8"	6	1.12	1.68	583	1 1/2" x 18"	3	3.12	4.68	620	5/16" x 12"	6	1.32	1.98
200	1" x 8 1/2"	6	1.32	1.98	FLAT BRICK CHISEL					620	1/4" x 18"	3	2.12	3.18
SOIL PIPE CHISEL					941	1 1/8" x 12"	3	1.28	1.92	*620-S	1/4" x 18"	3	2.12	3.18
201	3/4" x 7 1/2"	6	.92	1.38	OCTAGON BRICK CHISELS					620	1/2" x 18"	3	2.48	3.72
201	7/8" x 8"	6	1.23	1.92	944	1" x 12"	3	1.24	1.86	DRIFT PUNCHES				
EXTRA LENGTH COLD CHISELS					944	1" x 18"	3	1.68	2.52	630	3/16" x 10"	6	.92	1.38
205	1/2" x 10"	6	.76	1.14	944	1 1/4" x 24"	3	2.76	4.14	630	1/4" x 10"	6	.96	1.44
205	1/2" x 12"	6	.84	1.26	FLOOR AND UTILITY CHISELS					630	5/16" x 10"	6	1.08	1.62
205	5/8" x 12"	6	.88	1.32	950	2 1/2" x 11"	6	2.60	3.90	630	3/8" x 10"	6	1.20	1.80
205	3/4" x 12"	6	1.12	1.68	950	3" x 12"	6	2.88	4.32	PIN PUNCHES				
205	7/8" x 12"	6	1.44	2.16	952	2 3/4" x 12"	6	2.96	4.44	2864	1/16" x 4"	12	.44	.66
205	1" x 12"	6	1.80	2.70	TILE CHISELS					2864	3/16" x 4"	12	.44	.66
205	3/4" x 18"	B	1.44	2.16	962	1/4" x 5"	12	.60	.90	2864	1/8" x 4"	12	.44	.66
205	7/8" x 18"	B	2.08	3.12	PLUGGING CHISELS					2864	5/16" x 4"	12	.44	.66
205	1" x 18"	B	2.48	3.72	963	3/16" x 10"	6	1.08	1.62	2864	3/8" x 4"	12	.45	.68
205	1 1/4" x 18"	B	4.32	6.48	963	1/4" x 10"	6	1.24	1.86	2864	1/2" x 4"	12	.48	.72
205	3/4" x 24"	B	2.08	3.12	SOLID PUNCHES					2864	1/4" x 4"	12	.48	.72
205	5/8" x 24"	B	2.64	3.96	263	1/16" x 4 1/2"	6	.56	.84	2864	5/16" x 4"	6	.52	.78
205	1" x 24"	B	3.64	5.46	263	1/8" x 4 1/2"	6	.56	.84	2864	3/16" x 4"	12	.48	.72
205	1 1/4" x 24"	B	5.84	8.76	263	3/16" x 5"	6	.56	.84	2864	1/2" x 4"	12	.48	.72
205	1 1/2" x 24"	B	8.52	12.78	263	1/8" x 5 1/2"	6	.56	.84	2864	5/8" x 4"	6	.52	.78
205	1 3/4" x 36"	B	8.52	12.78	263	1/4" x 6"	6	.63	.94	2864	3/8" x 4"	6	.60	.90
205	1 1/2" x 36"	B	12.20	18.30	263	1/8" x 6"	6	.68	1.02	2866	3/16" x 6"	12	.52	.78
CAPE CHISELS					263	3/16" x 6 1/2"	6	.80	1.20	2866	5/16" x 6"	12	.52	.78
223 (See Listing Below)					263	1/4" x 7"	6	.88	1.32	2866	3/8" x 6"	12	.52	.78
HALF ROUND CHISELS					PUNCHES					2866	1/2" x 6"	12	.52	.78
233 (See Listing Below)					SOLID PUNCHES					2866	5/8" x 6"	12	.52	.78
DIAMOND POINT CHISELS					263	1/16" x 4 1/2"	6	.56	.84	2866	3/16" x 6"	12	.52	.78
243 (See Listing Below)					263	1/8" x 4 1/2"	6	.56	.84	2866	1/4" x 6"	12	.52	.78
1/8" x 4 1/2"	12		.72	1.08	263	3/16" x 5"	6	.56	.84	2869	1/8" x 9"	6	.80	1.20
5/16" x 5"	12		.76	1.14	263	1/8" x 5 1/2"	6	.56	.84	2869	5/16" x 9"	6	.80	1.20
1/4" x 6 1/2"	6		.84	1.26	263	1/4" x 6"	6	.63	.94	2869	1/4" x 9"	6	.80	1.20
5/8" x 7"	6		.92	1.38	263	1/8" x 6"	6	.68	1.02	2869	5/8" x 9"	6	.80	1.20
3/8" x 7 1/2"	6		1.00	1.50	263	3/16" x 6 1/2"	6	.80	1.20	2869	1/2" x 9"	6	.87	1.30
1/2" x 8"	6		1.20	1.80	263	1/2" x 7"	6	.88	1.32	PRICK PUNCHES				
5/8" x 8"	6		1.44	2.16	PRICK PUNCHES					2873	1/4" x 4"	12	.56	.84
3/4" x 8 1/2"	6		1.68	2.52	2873	3/8" x 5"	12	.56	.84	2873	1/2" x 6"	6	.76	1.14
7/8" x 9"	6		2.56	3.84	2873	1/2" x 6"	6	.76	1.14					

CUTTERS—FILE CLEANERS—SAW VISE—BRACE WRENCHES AND DRILLS

(Stock Numbers Listed in Numerical Sequence by Category)

STOCK No.	STD. PKG.	EACH NET	EACH LIST
CUTTERS			
WASHER CUTTERS			
407	1	6.53	9.80
407-A Knives		1.24	1.86
410 Screws		.48	.72
411	1	6.00	9.00
411-A Knives		1.24	1.86
410 Screws		.48	.72

GASKET CUTTERS			
No. 414			
414 Handy Gasket Cutter with K-2 Complete Kit of 6 Parts		9.00	13.50
A-14 Gasket Cutter with K-2, C-10		14.00	21.00

No. 415			
415 Extension Gasket Cutter with K-7 Complete Kit of 6 parts, H-17 Hexagon Key and H-27 Pin Handle		27.00	40.50
E-12 Extension Arm		4.00	6.00
C-15 Cutting Board, 18" x 18", with Plastic Cutting Pad		12.00	18.00
A-1 Gasket Cutter—same as 415 plus C-15		44.00	66.00
A-2 Gasket Cutter—same as A-1 plus 1 E-12		48.00	72.00
A-3 Gasket Cutter—same as A-1 plus 2 E-12		52.00	78.00
A-4 Gasket Cutter—same as A-1 plus 3 E-12		56.00	84.00
A-5 Gasket Cutter—same as A-1 plus 4 E-12		60.00	90.00

No. 416			
416 Extension Gasket Cutter with K-7 Kit of 6 parts, H-17 Key and H-27 Pin Handle		12.00	18.00
E-12 Extension Arm		4.00	6.00
D-47 Dove Tail Designer		1.00	1.50
L-37 Bolt Hole Locator		1.00	1.50
C-15 Cutting Board, 18" x 18", with Plastic Cutting Pad		12.00	18.00
C-16 Cutting Board, 18" x 18", with Fibre Cutting Pad		4.00	6.00
B-13 Gasket Cutter—same as 416 plus C-16		16.00	24.00
B-25 Gasket Cutter—same as B-13 plus 1 E-12		20.00	30.00
B-37 Gasket Cutter—same as B-13 plus 2 E-12		24.00	36.00
B-49 Gasket Cutter—same as B-13 plus 3 E-12		28.00	42.00
B-61 Gasket Cutter—same as B-13 plus 4 E-12		32.00	48.00

METAL CUTTERS			
1406	1	8.32	12.48
1406-HSR	1	14.80	22.20
1406-HST	1	15.28	22.92
1407 Knives			
Carbon Steel		1.88	2.82
1408 Knives			
High Speed		2.88	4.32
1409 Center Drill		1.47	2.20
1410 Adj. Screw		.48	.72

STOCK No.	SIZE	STD. PKG.	EACH NET	EACH LIST
FILE CLEANERS				
363		12	.56	.84
364		12	.72	1.08
3641		12	.84	1.26
366		6	1.16	1.74
366-P Plates			.12	.18
366-N Nuts			.20	.30

SAW VISE

22	1	3.64	5.46
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BRACE WRENCHES

SQUARE				
151	$\frac{1}{4}$ "	6	.76	1.14
152	$\frac{3}{8}$ "	6	.92	1.38
153	$\frac{1}{2}$ "	6	1.24	1.86
154	$\frac{3}{4}$ "	6	1.28	1.92
155	$\frac{1}{2}$ "	6	1.32	1.98
156	$\frac{3}{4}$ "	6	1.36	2.04
1560	$\frac{1}{2}$ "	6	1.40	2.10
157	$\frac{3}{4}$ "	6	1.44	2.16
158	$\frac{1}{2}$ "	6	1.56	2.34
159	1"	6	2.00	3.00

HEXAGON				
165	$\frac{1}{4}$ "	6	.76	1.14
166	$\frac{3}{8}$ "	6	.92	1.38
167	$\frac{1}{2}$ "	6	1.24	1.86
168	$\frac{3}{4}$ "	6	1.28	1.92
169	$\frac{1}{2}$ "	6	1.32	1.98
170	$\frac{3}{4}$ "	6	1.36	2.04
171	$\frac{1}{2}$ "	6	1.40	2.10
172	$\frac{3}{4}$ "	6	1.44	2.16
173	$\frac{1}{2}$ "	6	1.56	2.34
174	1"	6	2.00	3.00

MASONRY DRILLS

V-FLAT STAR DRILLS (For Power Hammers)

100	$\frac{1}{4}$ " x 5"	6	1.31	1.96
100	$\frac{1}{8}$ " x 5"	6	1.31	1.96
100	$\frac{3}{8}$ " x 5"	6	1.35	2.02
100	$\frac{1}{2}$ " x 5"	6	1.35	2.02
100	$\frac{1}{2}$ " x 5"	6	1.35	2.02
100	$\frac{1}{4}$ " x 8"	6	1.48	2.22
100	$\frac{1}{8}$ " x 8"	6	1.48	2.22
100	$\frac{3}{8}$ " x 8"	6	1.48	2.22
100	$\frac{1}{2}$ " x 8"	6	1.48	2.22
100	$\frac{1}{2}$ " x 8"	6	1.60	2.40
100	$\frac{3}{8}$ " x 8"	6	1.60	2.40
100	$\frac{1}{4}$ " x 8"	6	1.64	2.46
100	$\frac{1}{8}$ " x 8"	6	1.76	2.64
100	$\frac{3}{4}$ " x 8"	6	1.76	2.64
100	$\frac{1}{8}$ " x 8"	6	2.08	3.12
100	1" x 8"	6	2.19	3.28
100	$\frac{1}{4}$ " x 12"	6	1.60	2.40
100	$\frac{1}{8}$ " x 12"	6	1.60	2.40
100	$\frac{3}{8}$ " x 12"	6	1.60	2.40
100	$\frac{1}{2}$ " x 12"	6	1.69	2.54
100	$\frac{1}{2}$ " x 12"	6	1.69	2.54
100	$\frac{3}{8}$ " x 12"	6	1.69	2.54
100	$\frac{1}{4}$ " x 12"	6	1.81	2.72
100	$\frac{3}{4}$ " x 12"	6	1.91	2.86
100	$\frac{7}{8}$ " x 12"	6	2.17	3.26
100	1" x 12"	6	2.33	3.50
100	$1\frac{1}{8}$ " x 12"	6	3.35	5.02

V FLAT STAR DRILLS (Con.)

100	$\frac{1}{2}$ " x 18"	B	1.73	2.60
100	$\frac{3}{8}$ " x 18"	B	1.87	2.80
100	$\frac{1}{4}$ " x 18"	B	2.03	3.04
100	$\frac{1}{8}$ " x 18"	B	2.19	3.28
100	$\frac{3}{4}$ " x 18"	B	2.35	3.52
100	$\frac{7}{8}$ " x 18"	B	2.79	4.18
100	1" x 18"	B	3.23	4.84
100	$1\frac{1}{8}$ " x 18"	B	3.81	5.72

ADAPTER CHUCK FOR ABOVE DRILLS

120	1	7.92	11.88
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STONE (BULL) POINTS

584	$\frac{3}{4}$ " x 9"	B	1.20	1.80
584	$\frac{3}{4}$ " x 12"	B	1.32	1.98
584	$\frac{1}{2}$ " x 12"	B	1.53	2.30
584	1" x 12"	B	1.80	2.70
584	1" x 15"	B	2.08	3.12
584	$\frac{1}{2}$ " x 18"	B	2.12	3.18
584	1" x 18"	B	2.48	3.72
584	$1\frac{1}{4}$ " x 18"	B	3.76	5.64
584	$1\frac{1}{4}$ " x 18"	B	4.48	6.72
584	1" x 24"	B	3.64	5.46
584	$1\frac{1}{8}$ " x 24"	B	4.56	6.84
584	$1\frac{1}{4}$ " x 24"	B	5.84	8.76
584	$1\frac{1}{2}$ " x 24"	B	8.52	12.78
584	$1\frac{1}{4}$ " x 36"	B	8.52	12.78
584	$1\frac{1}{2}$ " x 36"	B	12.20	18.30

STAR DRILLS, HAND

800	$\frac{1}{4}$ " x 8"	12	.44	.66
800	$\frac{1}{8}$ " x 8"	12	.44	.66
800	$\frac{3}{8}$ " x 8"	12	.44	.66
800	$\frac{1}{2}$ " x 8"	12	.48	.72
800	$\frac{1}{2}$ " x 8"	12	.52	.78
800	$\frac{5}{8}$ " x 8"	12	.56	.84
800	$\frac{3}{4}$ " x 8"	6	.72	1.08
800	$\frac{1}{4}$ " x 12"	12	.48	.72
800	$\frac{1}{8}$ " x 12"	12	.48	.72
800	$\frac{3}{8}$ " x 12"	12	.48	.72
800	$\frac{1}{2}$ " x 12"	12	.52	.78
800	$\frac{1}{2}$ " x 12"	12	.52	.78
800	$\frac{1}{2}$ " x 12"	12	.59	.88
800	$\frac{3}{8}$ " x 12"	12	.59	.88
800	$\frac{1}{4}$ " x 12"	6	.69	1.04
800	$\frac{3}{4}$ " x 12"	6	.69	1.04
800	$\frac{1}{8}$ " x 12"	6	.91	1.36
800	1" x 12"	6	.96	1.44
800	$1\frac{1}{8}$ " x 12"	B	1.35	2.02
800	$1\frac{1}{4}$ " x 12"	B	1.55	2.32
800	$\frac{1}{2}$ " x 18"	B	.63	.94
800	$\frac{5}{8}$ " x 18"	B	.84	1.26
800	$\frac{3}{4}$ " x 18"	B	.85	1.28
800	$\frac{7}{8}$ " x 18"	B	1.12	1.68
800	1" x 18"	B	1.28	1.92
800	$1\frac{1}{8}$ " x 18"	B	1.49	2.24
800	$1\frac{1}{4}$ " x 18"	B	1.84	2.76
800	$1\frac{3}{8}$ " x 18"	B	2.25	3.38
800	$1\frac{1}{2}$ " x 18"	B	2.93	4.40
800	$1\frac{3}{4}$ " x 18"	B	4.84	7.26
800	$\frac{3}{4}$ " x 24"	B	1.05	1.58
800	$\frac{1}{2}$ " x 24"	B	1.17	1.76
800	1" x 24"	B	1.55	2.32
800	$1\frac{1}{4}$ " x 24"	B	2.43	3.64
800	$1\frac{1}{2}$ " x 24"	B	3.83	5.74
800	$1\frac{3}{4}$ " x 24"	B	5.28	7.92

CARBIDE TIPPED MASONRY DRILLS

NOTE: See Pages 5 thru 8 for prices on Carbide Tipped Masonry Drills.